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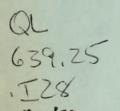
JANUARY 1988

ICHTHYOPLANKTON AND STATION DATA FOR CALIFORNIA COOPERATIVE OCEANIC FISHERIES INVESTIGATIONS SURVEY CRUISES IN 1969

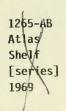
Elizabeth G. Stevens Richard L. Charter H. Geoffrey Moser Larry R. Zins

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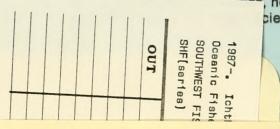


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ICHTHYOPLANKTON AND STATION DATA FOR CALIFORNIA COOPERATIVE OCEANIC FISHERIES INVESTIGATIONS SURVEY CRUISES IN 1969

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NOAA-TM-NMFS-SWFC-100

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ABSTRACT

This report provides ichthyoplankton and associated station and tow data from California Cooperative Oceanic Fisheries Investigations (CalCOFI) cruises conducted off California and Baja California in 1969. It is the nineteenth report in a series that presents these data for all biological-oceanographic CalCOFI surveys from 1951 to the present. A total of 1724 stations was occupied during 10 monthly multivessel cruises over the survey area which extended from the California-Oregon border to Pt. San Juanico, Mexico, and seaward to several hundred miles. The data are listed in a series of 6 tables; the background, methodology, and information necessary for interpretation and quantitative analysis of the data are presented in an accompanying text. pertinent station and tow data, including volumes of water strained and standard haul factors, are listed in the first table. Another key table lists, by station and month, standardized counts of each of the 153 larval fish categories identified from survey samples. This and previous and subsequent reports make the CalCOFI ichthyoplankton and station data available to all investigators and serve as guides to the newly developed computer data base.

INTRODUCTION

report, the nineteenth of a series, provides ichthyoplankton and associated station and tow data from California Cooperative Oceanic Fisheries Investigations (CalCOFI) joint biological-oceanographic survey cruises conducted in 1969. This program was initiated in 1949, under the sponsorship of the Marine Research Committee of the State of California, to study the population fluctuations of the Pacific sardine (Sardinops sagax) and the environmental factors that may play a role in such fluctuations. CalCOFI, known as the California Cooperative Sardine Research Program from 1949 to 1953, was made up of representatives of the South Pacific Fisheries Investigations (SPFI) of the U.S. Fish and Wildlife Service [now the La Jolla Laboratory, National Marine Fisheries Service (NMFS)], the Scripps Institution of Oceanography (SIO), the California Department of Fish and Game (CDFG), the California Academy of Sciences (CAS) and the Hopkins Marine Station of Stanford University. The first three of these agencies supplied ships and personnel to conduct the sea surveys. NMFS processed the plankton samples and analyzed the ichthyoplankton from them. SIO processed and analyzed the hydrographic samples and measurements and also analyzed invertebrate groups from the plankton samples.

The boundaries, station placement, and sampling frequency for the CalCOFI survey area were based on the results of joint biological and oceanographic cruises conducted by NMFS and SIO during 1939-41. Those cruises were designed to collect sardine eggs and larvae and associated hydrographic data over the entire areal and seasonal spawning range of the species. On these survey cruises, plankton tows were made to 70 m, a depth which

encompassed the vertical distribution of sardine eggs and larvae. Wide-ranging joint biological and oceanographic survey cruises were resumed in 1949 with sardine as the focus; however, an increasing interest in other biological components resulted in the deepening of standard tows to 140 m in 1951. This marked the beginning of truly quantitative ichthyoplankton sampling on CalCOFI surveys.

Data resulting from CalCOFI surveys in 1969 have been published in a number of forms. Hydrographic data (Univ. of Calif., SIO, 1976, 1977, 1979, 1980) and zooplankton volumes (Smith, 1974) were presented in standard formats. Distributional maps of larvae of 2 taxa taken on CalCOFI surveys during 1969 are presented in the CalCOFI atlas series: rockfish (Sebastes spp.), Ahlstrom et al., 1978; and northern anchovy (Engraulis mordax), Hewitt, 1980.

A computer data base for eggs and larvae of sardine and anchovy, for larvae of Pacific hake (Merluccius productus), jack mackerel (Trachurus symmetricus) and Pacific mackerel (Scomber japonicus), and for eggs of Pacific saury (Cololabis saira) was established in 1969. The development of a data base for other fish larvae is a complex undertaking because competency of identification has evolved steadily over the past 38 years. We began the task of producing a CalCOFI ichthyoplankton data base and associated data report series in 1983. All available original records for 1969 were subjected to an extensive verification and editing process to produce this report. This and previous (Ambrose et al., 1987a,b,c; 1988a,b; Sandknop et al., 1987a,b; 1988a,b,c; Stevens et al., 1987a,b,c; 1988; Sumida et al., 1987a,b; 1988a, b) and subsequent reports make the CalCOFI ichthyoplankton and station data available to all investigators and serve as guides to the computer data base. data base will be modified when additional errors are discovered and when composite taxa from the earlier years are reidentified. These reports are the fundamental reference documents against which subsequent changes in the data base can be compared.

SAMPLING AREA AND PATTERN

In 1969, CalCOFI survey cruises were conducted at monthly intervals, except for March and November. A total of 1724 stations included in this data base was occupied on 10 cruises, with an average of 172 stations per cruise (range 93-315). Coverage of the survey station pattern varied among cruises and the entire survey area was not covered on any single cruise (Figures 1-13, Table 1). The area off northern California (lines 40-57) was covered on only one cruise (February). Coverage off central California (lines 60-77) was more consistent with all major lines occupied in January, February, May, July, August, October, and December. The area between Pt. Conception, California, and Pt. San Juanico, Baja California (lines 80-137) was occupied on cruises in February, April, July, October and December; southerly coverage of this region stopped at Sebastian

Vizcaino Bay (line 120) in January and at San Diego (line 93) in May and August. The June and September cruises covered northern and central Baja California (lines 97-137). The area off southern Baja California (lines 140-157) was not surveyed in 1969. Typically, coverage did not extend beyond station 90 (approximately 160-260 miles offshore); however, coverage extended seaward to station 140 (approximately 400-500 miles offshore) on lines 90 and 93 in January, April, July and October; and to station 120 (approximately 270-360 miles offshore) on all lines from 40 through 77 in February Some inshore stations were occupied in 1969 which were not covered on early CalCOFI surveys. These stations were included in the data base (Table 1) but were omitted from the station plots (Figures 2-13).

Three vessels were employed on these cruises: the David Starr Jordan and Miller Freeman of NMFS, and the Alexander Agassiz of SIO. One to three vessels participated on each cruise with two being the average number. The Alexander Agassiz was used on 8 cruises, the David Starr Jordan on 7 and the Miller Freeman on 1 (Univ. of Calif., SIO, 1976, 1977, 1979, 1980).

After 1969, CalCOFI surveys were made on a triennial basis. These began in 1972 and continued every 3 years (1975, 1978, 1981, 1984) until 1985 when annual surveys were resumed.

SAMPLING GEAR AND METHODS

In 1969, changes were made in both the gear and the method used to collect CalCOFI ichthyoplankton samples (Smith, 1974). The net material of the standard 1-m diameter ring net was changed from silk bolting cloth to 0.505 mm nylon mesh throughout; the cod end was constructed of 0.333 mm nylon mesh (P. E. Smith, pers. comm.). The 1-m net was mounted on a frame which also held a 1/2-m ring net constructed of 0.333 mm nylon mesh throughout (see Fig. 6 in Kramer et al., 1972). The frame was fastened to a short 3-lead bridle connected to several meters of line which attached to the towing cable by a clamp. A current meter was suspended in the center of the mouth of each

¹CalCOFI lines (Figure 14) are arranged perpendicular to the coastline and extend from the Canadian border (line 10) to below Cape San Lucas, Baja California (line 157). Stations were established on the basis of a perpendicular to line 80 (off Pt. Conception) at a point designated as station 60. Stations were plotted seaward and shoreward from station 60 on each line. Cardinal CalCOFI lines (those ending in "0") are 120 miles apart and usually bracket two ordinal lines (ending in "3" or "7"), so that lines are 40 miles apart over most of the pattern. Cardinal stations are 40 miles apart and typically these are separated by a station number ending in "5" so that stations are 20 miles apart out to station 90 on most lines. Stations are placed at closer intervals near the coast and islands to accommodate these features (see Kramer et al., 1972 for further details).

net to measure volume of water filtered (see Kramer et al., 1972, for further details). The 2-net array was used only in 1969. The single 1-m ring net with 0.505 mm nylon mesh was used on the next two surveys (1972, 1975) and was replaced by the Bongo net in 1978.

The standard tow in 1969 was an oblique haul to 200 m depth (to 15 m of the bottom in shallow areas) designed to filter a constant amount of water per depth interval (ca. 3m3/m of depth) over the vertical range of most ichthyoplankters. were made at a ship speed of 1.5-2.0 knots and initiated by clamping the net line to the towing cable with the 45 kg terminal weight about 10-15 m below the surface. The net was lowered to 200 m depth by paying out 300 m of wire over a 6 minute period (33 m of depth/min.). After fishing at depth for 30 seconds, the net was retrieved at 20 m/min. (14 m depth/min.). The angle of stray of the towing cable was recorded every 30 seconds and maintained at 45° (+3°) by adjusting the ship speed and course. After reaching the surface, the net was washed down and the samples preserved in 5% formalin buffered with sodium borate. Flowmeter readings were made at the beginning and end of each Detailed descriptions of gear and methods are given by Kramer et al. (1972), and Smith and Richardson (1977).

LABORATORY PROCEDURES

Laboratory processing began with the determination of a displacement volume for each sample (methods described in Staff, SPFI, 1953 and Kramer et al., 1972). Zooplankton volumes (including ichthyoplankton) of samples collected in 1969 are presented graphically in Smith (1974).

Sorting involved the removal of ichthyoplankton from the sample and identification and separation of: eggs and larvae of Pacific sardine and northern anchovy; larvae of Pacific hake; and eggs of Pacific saury. Each sample was sorted completely; no samples were fractioned in 1969.

A "standard haul factor" (SHF) was calculated for each tow to make them comparable and allow estimations of areal abundance. This factor adjusts the number of eggs or larvae in a haul to the number in 10 m 3 of water strained per meter of depth fished. If the vertical distribution of the species has been encompassed, then the adjusted value is equivalent to the number under 10 m 2 of sea surface. The SHF is calculated for each haul by the formula:

$$SHF = 10 D$$

V = total volume of water (m³) strained during the haul

 $V = R \cdot a \cdot p$

where R = total number of revolutions of the current meter during the haul

 $a = area (m^2)$ of the mouth of the net

p = length of column of water (m) needed to
 produce one revolution of the current
 meter.

Tow depth, volume of water strained, and standard haul factor are listed in Table 1 for each tow taken during 1969. Detailed descriptions of factors involved in calculating these values are presented in Ahlstrom (1948), Kramer et al. (1972), and Smith and Richardson (1977).

IDENTIFICATION

Identification of ichthyoplankton species beyond separated during the sorting process was carried out by a separate group of specialists. Ontogenetic stages of fishes are inherently difficult to identify and this is further complicated by the large number and diversity of species which contribute to the ichthyoplankton of the California Current region. identifications were accomplished by establishing ontogenetic series on the basis of morphology, meristics, and pigmentation and then identifying these series by relating them to known metamorphic, juvenile, or adult stages with overlapping features (Powles and Markle, 1984). A total of 151 taxa was identified for 1969, with 87 taken to species, 29 to genus, 29 to family, and 6 to order or suborder. Beginning in 1961, larvae in the families Paralepididae and Labridae were identified to genus or In 1969, larvae of the mirapinnatoid family species. Eutaeniophoridae and two species of myctophids, Parvilux ingens and Protomyctophum thompsoni, were identified for the first time.

The task of producing a reliable and equitable ichthyoplankton data base required extensive procedures to verify, correct, and edit the original identifications. The primary data source was the original identification sheets (see Kramer et al., 1972, for examples); however, a critical resource used in all phases of this process was the CalCOFI ichthyoplankton collection in which the samples are archived. Throughout the course of CalCOFI ichthyoplankton studies, samples have been identified to the lowest taxon possible. In reviewing these identifications for the data base, our approach has been conservative and we have preserved those identifications and counts which we could confirm, while correcting as many of the errors as possible. After computer entry, taxonomic errors and inconsistencies in the data base were corrected and the most

obvious identification errors were corrected. Our current knowledge of ichthyoplankton techniques coupled with a precise understanding of the development of identification competency in the program over the years allowed us to critically judge the historical records. Identifications were changed to different taxa, lumped to a higher taxonomic category, or given a more precise taxonomic name. In some cases, identifications of a taxon were inconsistent among cruises in a year. These records were made equitable by lumping to the higher taxonomic category to avoid biases that could result in quantitative misinterpretation.

Next, statistical, seasonal, and geographic outliers were identified, employing a series of graphic summaries and listings. Examination of geographic outliers proved to be especially effective because of our accumulated knowledge of species In the course of examining samples for these distributions. outliers, other identification errors were discovered and eventually all taxa were scrutinized to some extent. certain taxa were reexamined in all samples for the entire CalCOFI time series. These taxa were selected because of their commercial, ecological, phylogenetic, or zoogeographic importance or because taxonomic confusion was at the ordinal level. The following is a list of the taxa for 1969 which received special attention, with explanations and caveats intended to aid in quantitative interpretations:

- Anguilliformes tentative and sporadic identifications to family or lower taxon lumped to order.
- Sardinops sagax all specimens south of line 120 checked for misidentification of Opisthonema spp.
- Engraulis mordax some nearshore samples of small E. mordax may contain other anchovy genera which could not be differentiated.
- Nansenia spp. all specimens checked and identified as N. candida or N. crassa; all specimens of these species near their range boundaries checked.
- Bathylagus spp. includes small and/or disintegrated specimens of Bathylagus or Leuroglossus stilbius.
- Bathylagus milleri all specimens checked.
- Osmeridae specimen checked.
- Stomiiformes all specimens checked and identified to genus or species; residuals are small, poorly preserved or unavailable specimens.
- Vinciguerria lucetia specimens taken seaward of station 100 checked for misidentification of V. poweriae; some V. poweriae may remain in these samples because small larvae

- of the two species could not be differentiated; sporadic identification of *V. poweriae* began in 1961.
- Sternoptychidae tentative and sporadic identifications of hatchetfishes to genus were lumped to family.
- Astronesthidae specimen checked.
- Bathophilus spp. all specimens checked.
- Tactostoma macropus all specimens checked.
- Paralepididae all specimens examined and identified to species; residuals are small, poorly preserved or unavailable specimens.
- Scopelarchidae tentative and sporadic identifications to genus lumped to family.
- Lampanyctus spp. tentative and sporadic identifications to species lumped to genus.
- Lampanyctus regalis underrepresented because of inability to differentiate small larvae (<5 mm) from those of other species of the genus; counts may include other species of the genus because of difficulty in identifying larvae of this large and complex genus.
- Lampanyctus ritteri comment for L. regalis applies to this species.
- Stenobrachius leucopsarus all specimens seaward of station 100 checked.
- Triphoturus mexicanus specimens seaward of station 100 checked for misidentification of T. nigrescens.
 - Diogenichthys atlanticus all specimens at margins of range checked.
- Diogenichthys laternatus all specimens at margins of range checked.
- Hygophum spp. all specimens reidentified to species; residuals
 are small, poorly preserved or unavailable specimens.
- Hygophum atratum all specimens checked.
- Hygophum reinhardtii all specimens checked.
- Physiculus spp. all specimens checked.
- Ophidiiformes this category did not exist originally and ophidiiform larvae were included in *Brosmophycis marginata*, "Otophidium", "Zoarcidae", and "blenny"; identifications of

- B. marginata proved to be mostly correct and "Zoarcidae" to be a yet unidentified ophidiiform species; all "Otophidium" and "blenny" were reexamined and the former included Ophidion scrippsae, Chilara taylori and other ophidiiform taxa (moved to order); "blenny" contained O. scrippsae, C. taylori, and other ophidiiform taxa in addition to true blennioids.
- Trachipteridae tentative and sporadic identifications to genus were lumped to family.
- Melamphaes spp. all identifications ascribed to Melamphaidae were reexamined and assigned to genus (Melamphaes, Poromitra) or species (Scopelogadus bispinosus, Scopeloberyx robustus); larvae originally identified as Melamphaes spp. were not reexamined and this category may contain other melamphaid genera.
- Cottidae all specimens checked.
- Oxylebius pictus all specimens checked.
- Zaniolepis spp. all specimens checked.
- Sebastes spp. category may contain other scorpaenid genera, particularly in samples south of line 120.
- Blennioidei this is the residual of the completely reexamined "blenny" category, which also contained various misidentified ophidiiforms, and is now restricted to members of northern stichaeioid families and true blennioids (other than Hypsoblennius spp.) in the southern part of the pattern).
- Labridae all specimens originally identified to family were reexamined and assigned to genus (Halichoeres spp.) or species (Oxyjulis californica, Semicossyphus pulcher).
- Chromis punctipinnis records south of about line 120 may include other pomacentrid taxa.
- Howella brodiei all specimens checked; some originally identified as Apogonidae; in this report we list H. brodiei in the family Apogonidae for convenience, recognizing that its systematic affinities are not resolved.
- Carangidae all specimens checked; tentative and sporadic identifications to genus or species (except *Trachurus symmetricus* and *Seriola lalandi*) were lumped to family.
- Seriola lalandi all specimens checked.
- Gerreidae tentative and sporadic identifications to genus lumped to family.

- Haemulidae tentative and sporadic identifications to genus lumped to family.
- Girella nigricans all specimens checked.
- Caulolatilus princeps all specimens checked.
- Sciaenidae tentative and sporadic identifications to genus lumped to family.
- Scombridae all larvae identified to this family or constituent taxa (except Scomber japonicus) were reexamined and reassigned; residuals are small, poorly preserved or unavailable specimens.
- Nomeidae tentative identifications to genus lumped to family.
- Pleuronectiformes all specimens of this category (originally called "flatfish") were examined and reidentified; residuals are small, poorly preserved or unavailable specimens.
- Bothidae all specimens examined and reassigned; most were assigned to various paralichthyid genera.
- Citharichthys spp. all larvae identified to species were lumped to genus except C. stigmaeus; category includes larvae of Etropus spp.
- Citharichthys stigmaeus includes larvae larger than ca. 4.5 mm; smaller larvae are in Citharichthys spp.
- Paralichthys spp. all specimens of this genus were examined and most were assigned to P. californicus or Xystreurys liolepis.
- Glyptocephalus zachirus all specimens examined.
- Hypsopsetta guttulata some specimens were originally identified as Pleuronichthys spp.
- Microstomus pacificus all specimens examined.
- Pleuronichthys spp. all larvae of this genus and constituent species were examined and assigned to species; residuals are small, poorly preserved or unavailable specimens.
- Psettichthys melanostictus all specimens examined.

COMPUTER ENTRY AND EDITING

Each taxon on the original identification sheets was given a 3-digit code based on the list of codes in Haight et al. (1979). Taxon codes and counts from these sheets were keypunched by cruise and station, along with pertinent station and tow data and entered into the VAX 11/780 computer at the University of California, San Diego, Computing Center. After entries were completed for an entire year, print-out listings of taxa and counts on each station were compared with the original data sheets to eliminate keypunch errors. Next, data in the file were cross-checked with data on an existing file which contained: station and tow data; numbers of eggs of sardine, anchovy, and saury; numbers of larvae of sardine, anchovy, hake, jack mackerel, and Pacific mackerel; total number of fish eggs; and total number of fish larvae.

Discrepancies in ichthyoplankton data in these two files were corrected by inspecting original records from the sorting laboratory, the original ichthyoplankton identification sheets, and the samples themselves. Station and tow data discrepancies between the two files were corrected by reviewing ships' logs and deck tow sheets, original records from the sorting laboratory, cruise announcements, publications, header information on the ichthyoplankton identification sheets, and station plots generated for each cruise. Eventually all station and tow data were checked by comparing these sources.

The corrected ichthyoplankton data base was then examined statistically and outliers were found and checked as above. Distributional plots were then prepared for each taxon and these were checked by reviewing the data sources mentioned above and by examining archived specimens. A listing of each taxon by station (Table 4) was produced, which became the primary document for subsequent checks. Misidentifications found in geographic outlier checks and other misidentifications and data problems discovered in the course of examining archived samples resulted in several iterations of Table 4. Finally, totals in Table 4 were checked against annual summaries of incidence and abundance (Tables 2 and 3). Ecological analyses of the data were conducted concurrently with editing procedures and provided cross-checks that allowed correction of errors.

SPECIES SUMMARY

Larvae of northern anchovy (Engraulis mordax) represented 54% of all fish larvae taken on CalCOFI cruises during 1969 and numbered five times as many as the rockfish genus, Sebastes spp., the next most abundant taxon with 10% of the total larvae (Table 2, 3). Northern anchovy also ranked first in incidence; Sebastes ranked 3rd. The next most abundant species was the deepsea smelt Leuroglossus stilbius with 6.3% of the total, followed by the gonostomatid Vinciguerria leucetia with 5.6%; they ranked 7th and 8th respectively in incidence. Pacific hake, Merluccius

productus, ranked 5th in abundance (5.4%) and 13th in occurrence. Two myctophids, Triphoturus mexicanus and Stenobrachius leucopsarus ranked 6th (2.6%) and 7th (2.4%) in number, and 5th and 12th in occurrence. The final 3 taxa in the top 10 collected in 1969 were the croaker family Sciaenidae, with 1.5%, the sanddab genus Citharichthys spp., with 1.2%, and jack mackerel, Trachurus symmetricus, with 0.9% of total larvae. These 3 taxa ranked 28th, 4th and 21st in incidence. The appearance of croaker larvae in the top 10 may reflect the increased number of stations occupied on the shoreward end of each line where these larvae are most abundant. These 10 taxa contributed 89.4% to the total number of larvae collected in 1969; the remaining 10.6% was distributed among 141 taxa plus the disintegrated and unidentified categories. The top 10 taxa comprised 4 coastal demersal groups, 2 coastal pelagic species, and 4 midwater species.

EXPLANATION OF TABLES

- Table 1 This table lists by cruise the pertinent station and tow data for 1969, the volume of water filtered and standard haul factor for each tow, the percent of sample sorted, and the total numbers of fish eggs and larvae. CalCOFI cruises are designated by four digits; the first two indicate the year and the second two the month. Within each cruise the data are listed in order of increasing line and station number (southerly and seaward directions); the order of station occupancy is shown on the station charts (Figures 2-13). Stations are designated by two groups of digits; the first set indicates the line and decimal fraction and the second set indicates the station on the line. Time is listed as Pacific Standard Time at the start of each tow in 24-hour designation. Methods for determining tow depth, volume of water strained, standard haul factor, and percent sorted were described in the methods section. The values for total fish eggs and larvae represent raw counts (unadjusted for percent sorted or standard haul factor). Ship codes are as follows: JD, David Starr Jordan; MF, Miller Freeman; AX, Alexander Agassiz.
- Table 2 This table lists pooled occurrences of all larval fish taxa taken during 1969 in ranked order.
- Table 3 This table lists pooled counts of all larval fish taxa taken during 1969 in ranked order. Numbers are adjusted for percent sorted and standard haul factors.
- Table 4 This table gives numbers of fish larvae for each taxon, listed by station and calendar month in which the tow was taken. Counts are adjusted for percent of sample sorted and standard haul factor. Average values are given for stations occupied more than once during a

month. See Table 1 for station and tow data and Table 6 for listing of stations with multiple occupancies during a month. Multiple occupancies occurred when a station was occupied more than once during a calendar month; in some cases, multiple occupancies resulted from separate cruises. The orders are listed in "phylogenetic" sequence modified from Nelson (1984). Subtaxa within each order are listed alphabetically. Page numbers for each taxon are given in the index at the end of the report.

- Table 5 This table is a summary of pooled occurrences of all larval fish taxa taken on CalCOFI surveys from 1961 to 1969. Taxa are listed in the same order as in Table 4.
- Table 6 List of stations with multiple occupancies in one month during 1969.

ACKNOWLEDGMENTS

Elaine Sandknop originally identified larvae from CalCOFI cruises of 1969. Ronald Whyte coded each larval fish taxon or type and Rita Ford entered them into the computer. Debby Snow efficiently assisted in all aspects of data editing and retrieval. Cindy Meyer and James Ryan provided programming Dorothy Roll designed the CalCOFI data acquisition assistance. system and provided data processing support. Ken Raymond, Roy Allen, and Henry Orr helped with graphics and production of the report. Lorraine Prescott and Diane Forsythe prepared the manuscript for printing. Paul Smith determined statistical outliers, provided assistance during geographical outlier checks and offered helpful suggestions throughout the project. Izadore Barrett, Director of the Southwest Fisheries Center and Reuben Chief, Coastal Fisheries Resources Division, SWFC, provided the support critical to the completion of the project. James Thrailkill planned CalCOFI surveys and supervised cruises, data handling, and plankton sorting from 1949 to 1986 and is largely responsible for the high quality of these operations. Without the vision and direction of Elbert Ahlstrom and Elton Sette and the dedicated efforts of the many people who collected, processed, and analyzed the samples, this data base would not exist.

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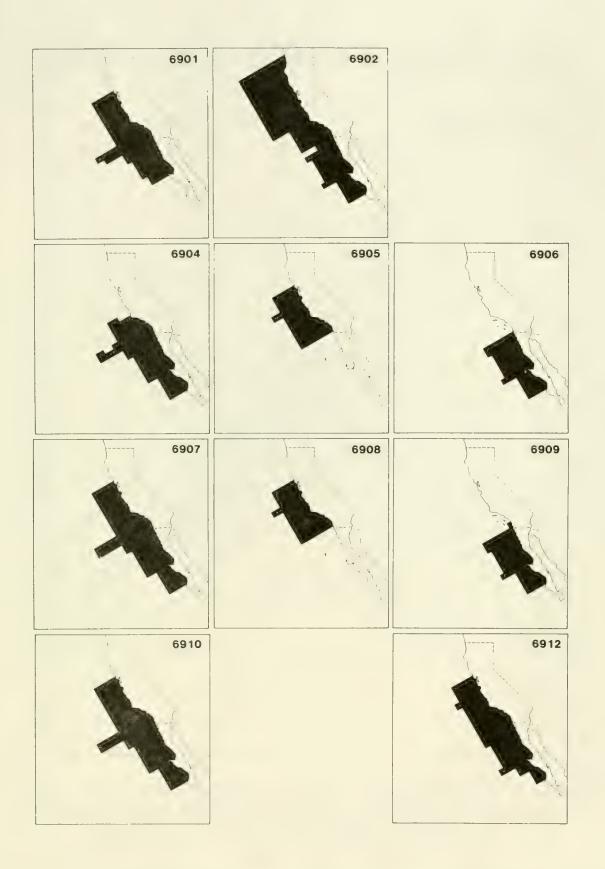


Figure 1. Composite arrangement of diagrammatic charts showing areas sampled on each CalCOFI cruise during 1969.

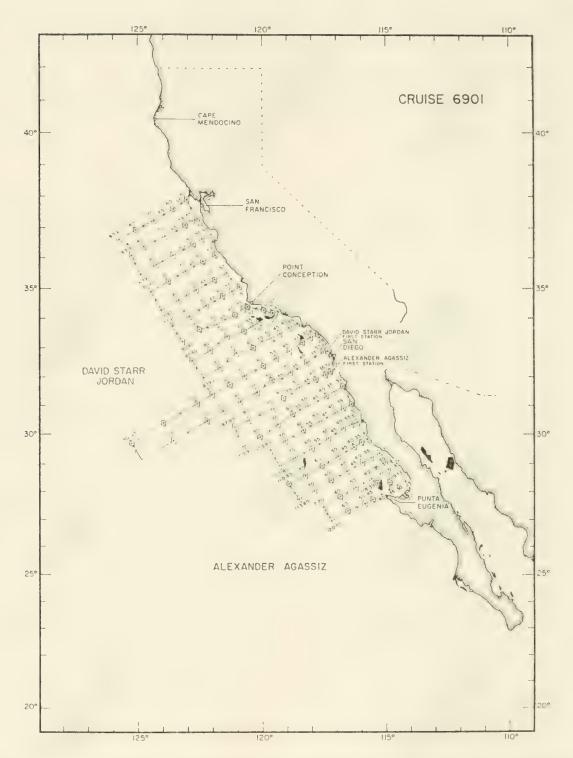


Figure 2. Station pattern for CalCOFI Cruise 6901 showing tracks for each vessel. Stations with plankton tows are indicated by a dot; circles designate hydrographic stations; diamonds signify STD recordings. Figures 2-13 modified from charts in Univ. of Calif., SIO (1976, 1977, 1979, 1980) to include only those stations listed in Table 1 of this report; see Table 1 for nearshore stations not shown on chart.

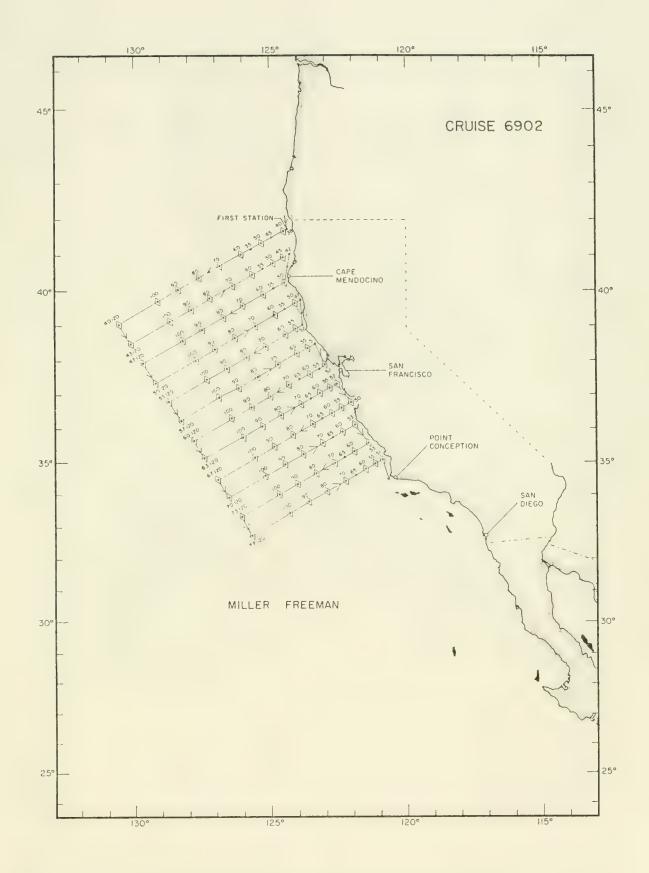


Figure 3. Station pattern for CalCOFI Cruise 6902 - Miller Freeman. Symbols as in Figure 2.

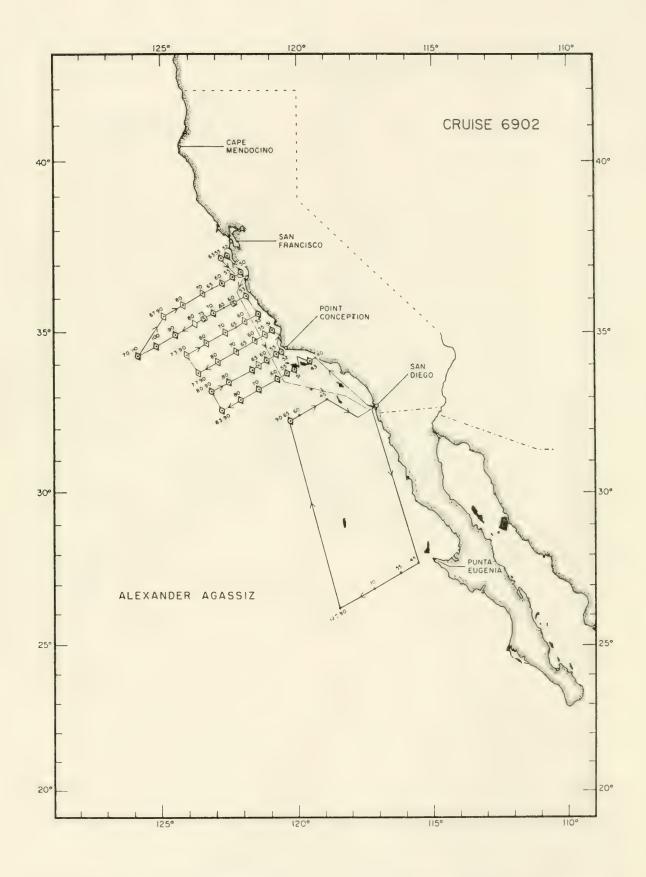


Figure 4. Station pattern for CalCOFI Cruise 6902 - Alexander Agassiz. Symbols as in Figure 2.

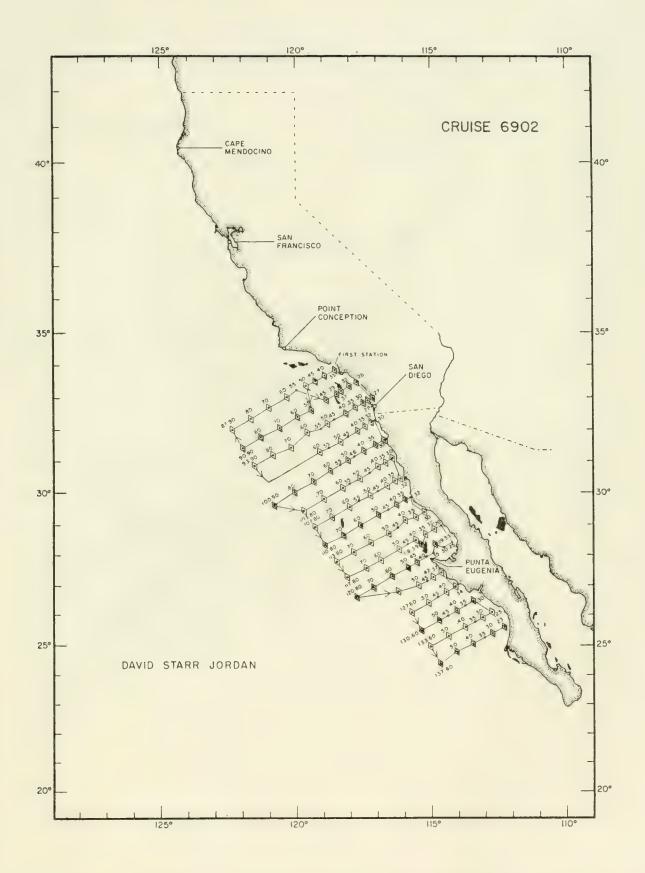


Figure 5. Station pattern for CalCOFI Cruise 6902 - David Starr Jordan. Symbols as in Figure 2.

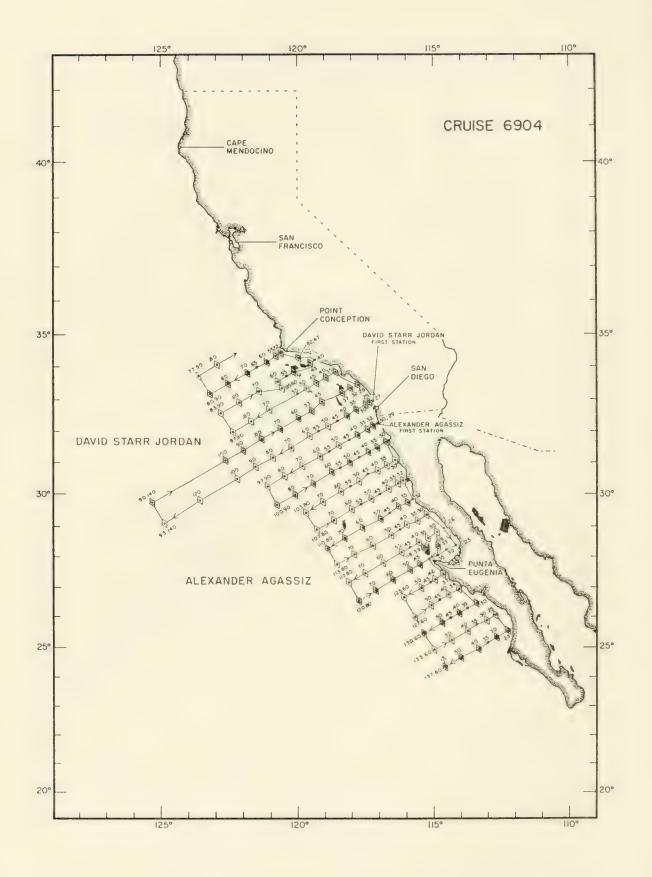


Figure 6. Station pattern for CalCOFI Cruise 6904. Symbols as in Figure 2.

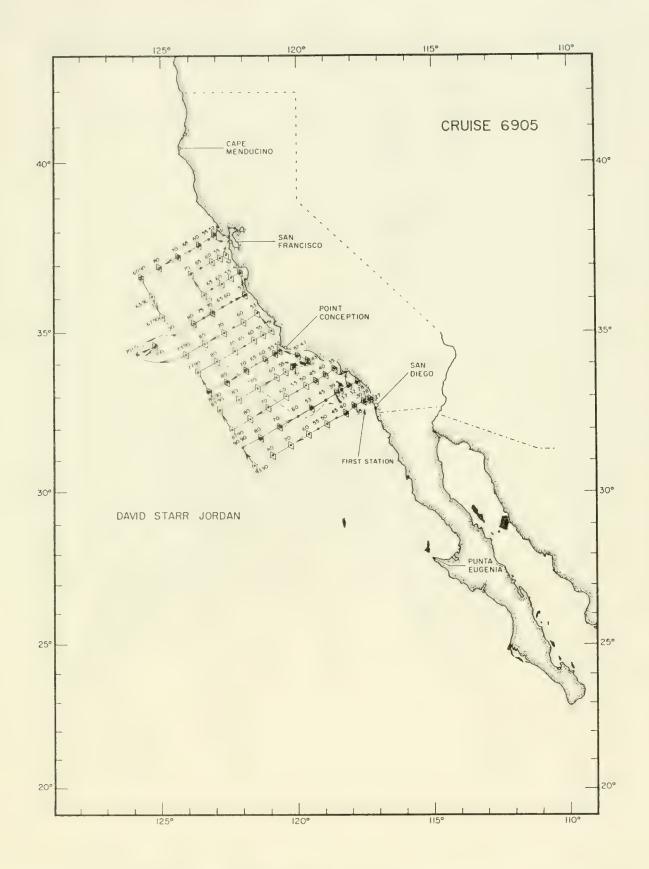


Figure 7. Station pattern for CalCOFI Cruise 6905. Symbols as in Figure 2.

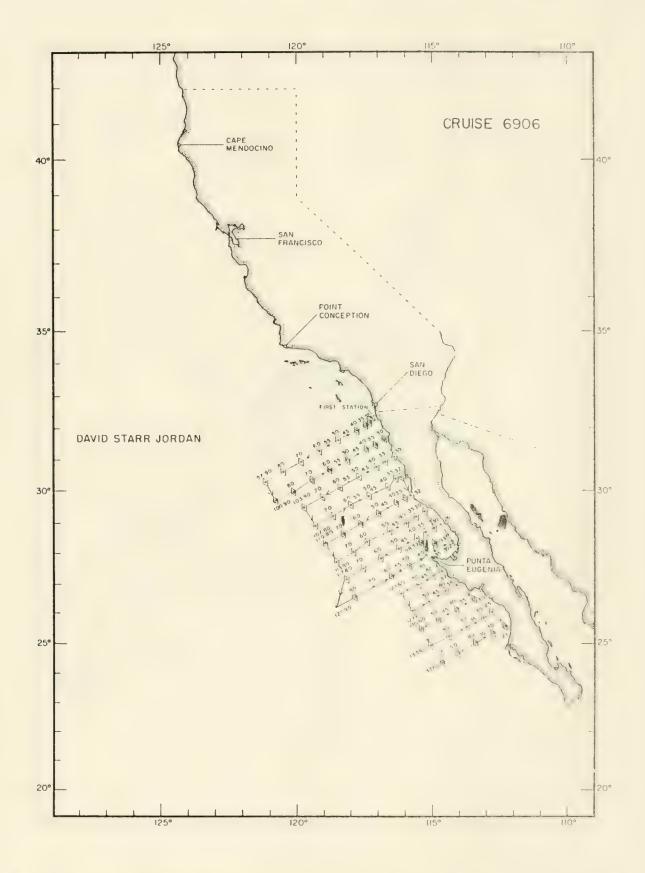


Figure 8. Station pattern for CalCOFI Cruise 6906. Symbols as in Figure 2.

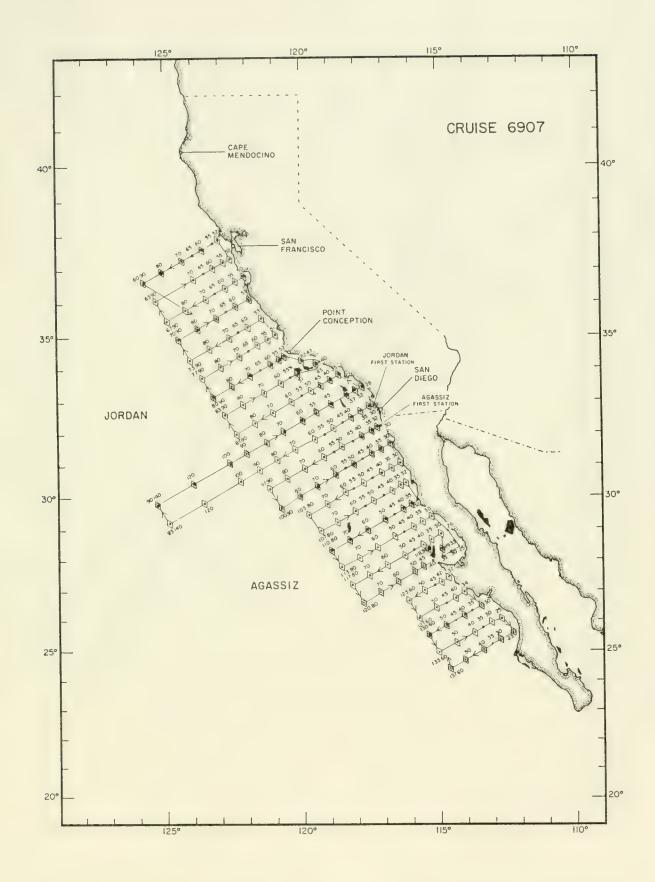


Figure 9. Station pattern for CalCOFI Cruise 6907. Symbols as in Figure 2.

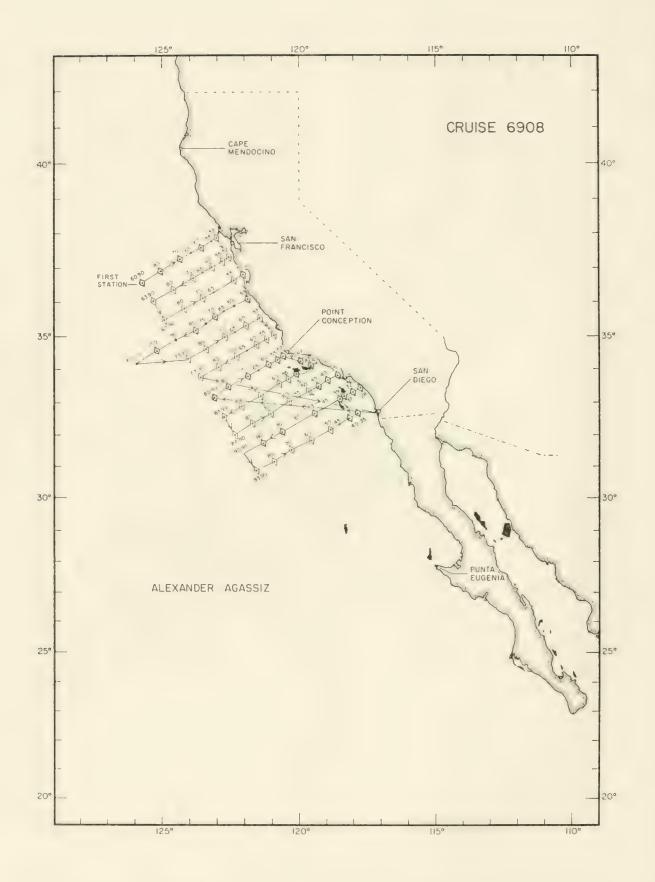


Figure 10. Station pattern for CalCOFI Cruise 6908. Symbols as in Figure 2.

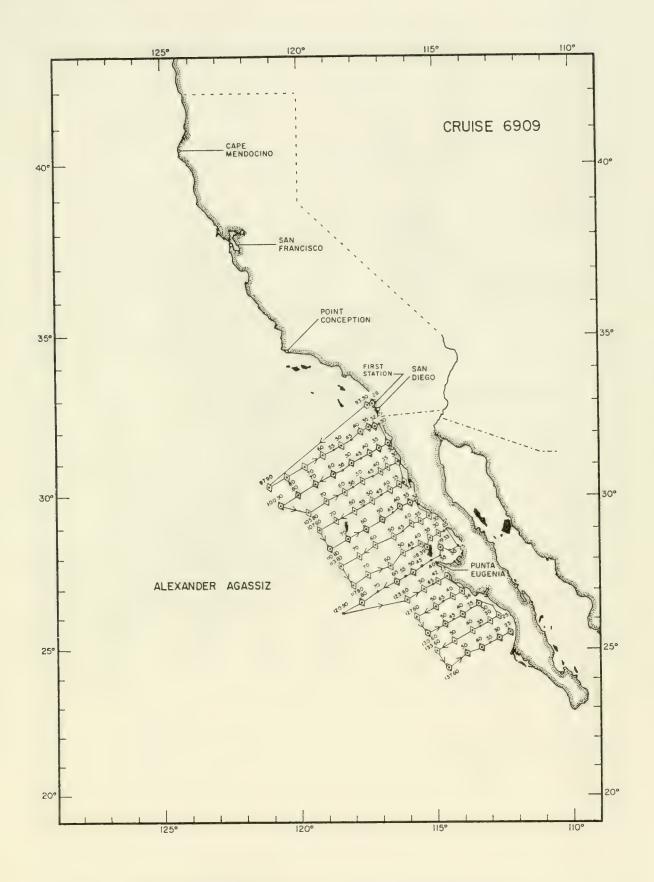


Figure 11. Station pattern for CalCOFI Cruise 6909. Symbols as in Figure 2.

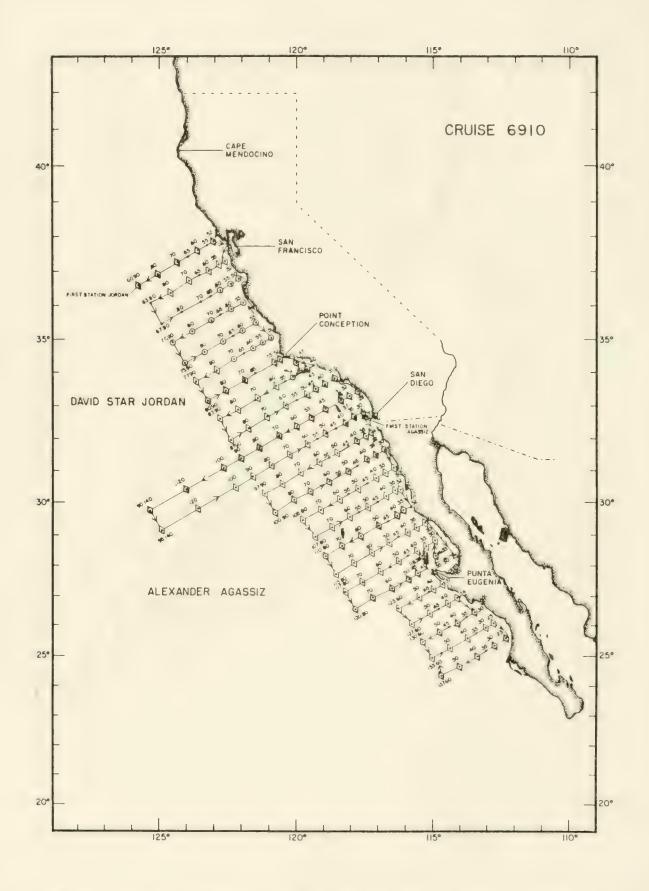


Figure 12. Station pattern for CalCOFI Cruise 6910. Symbols as in Figure 2.

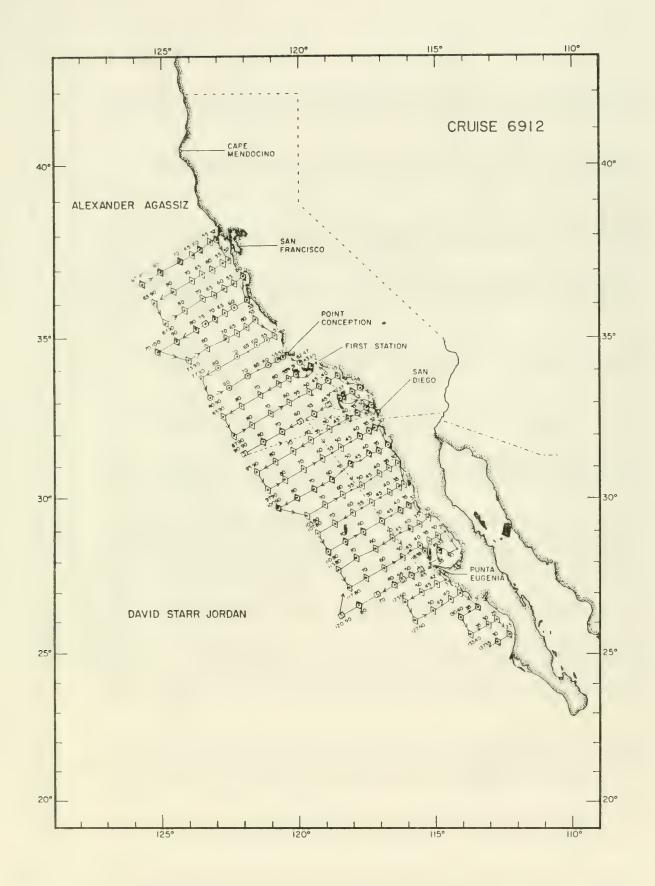


Figure 13. Station pattern for CalCOFI Cruise 6912. Symbols as in Figure 2.

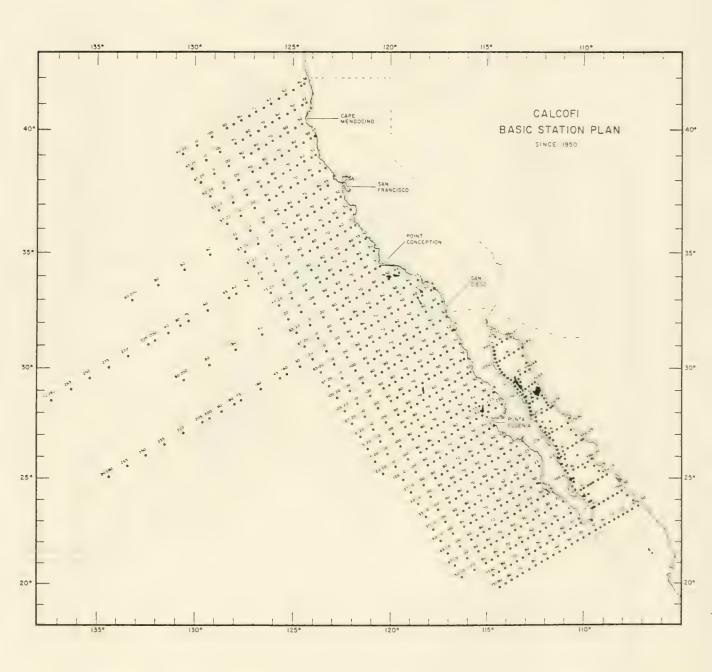


Figure 14. The basic station plan for CalCOFI cruises from 1950 to the present.

TABLE 1. Station and plankton tow data for CalCOFI cruises in 1969. Counts for fish eggs and larvae are not adjusted for standard haul factor or percent of sample sorted.

CalCOFI Cruise 6901

Total	300 15442 1700
Total Larvae	2005 8683 11177 1117
Percent Sorted	
Stand- ard Haul Factor	39999999999999999999999999999999999999
Vol. Water Strained (cu. m)	1132 66672 66672 66872 66873 66973 66873 66873 66873 66873 66873 66873 66973 67973 6
Tow Depth	1000 1000 1000 1000 1000 1000 1000 100
Time (PST)	11803 211333 211333 211333 211333 2111332 2111332 211133 211
Tow Date yr. mo. day	669 001 222 669 001 223 669 001 220 00
Ship	666666666666666666666666666666666666666
Long.(W) deg. min.	122 53.1 123 37.0 123 37.0 123 37.0 122 27.0 122 27.0 122 27.0 122 26.0 123 36.0 123 36.0 123 36.0 123 36.0 123 36.0 123 36.0 123 36.0 123 36.0 123 36.0 123 47.5 123 47.5 123 47.5 121 58.0 122 27.5 121 58.0 122 28.5 123 26.0 123 47.5 123 47.5 121 58.0 122 26.0 123 47.5 121 58.0 122 27.5 121 17.0 122 47.5 123 47.5 121 58.0 122 26.0 123 26.0 123 36.0 123 36.0 123 36.0 123 37.0 121 17.0 122 47.5 123 58.0 123 58.0 121 58.0 122 58.5 123 58.0 123 58.0 123 58.0 121 58.0 121 13.0 121 13.0
Lat.(N) deg. min.	37 37 37 37 37 37 37 37 37 37
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	Total Eggs	14455 14455 14455 14456 173 173 173 173 173 173 173 173 173 173
	Total Larvae	2888 119888 119888 11922 11936 10036 10036 1003 1003 1003 1003 1003
	Percent Sorted	
	Stand- ard Haul Factor	20020000000000000000000000000000000000
	Vol. Water Strained (cu. m)	6622 6638 6638 6638 6638 6638 6638 6638
901	Tow Depth (m)	22222222222222222222222222222222222222
uise 6	Time (PST)	00645 00755 00757
CalCOFI Crui	Tow Date yr. mo. day	699 01 19 699 01 118 699 01 118 699 01 118 699 01 118 699 01 118 699 01 117 699 01 118 699 01 115 699 01 117 699 01 118 699 01 119 699 01 110 699 01 110
	Ship Code	666666666666666666666666666666666666666
	Long. (W) deg. min.	122 16.0 123 39.0 120 36.5 120 36.5 121 0 48.0 121 30.0 122 32.0 122 32.0 119 58.0 119 58.0 120 22.0 120 22.0 121 26.0 122 50.0 122 50.0 123 13.0 120 22.0 121 26.0 122 50.0 123 23.0 120 22.0 121 26.0 122 50.0 123 24.0 121 26.0 122 50.0 123 24.0 120 22.0 121 26.0 122 50.0 123 24.0 120 22.0 121 26.0 122 39.0 123 39.0 124 00.0 125 39.0 127 46.7 128 19.0 129 28.5 119 27.5 119 27.5 119 27.5 117 21.0
	Lat. (N) deg. min.	334 24 25 26 26 26 27 26 27 26 27 26 27 26 27 26 27 27 27 27 27 27 27 27 27 27 27 27 27
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Line Station Lat.(N) Long.(W) Ship Tow Date Time Depth Strained Hall Percent Total Total Lat.(N) Long.(W) Ship Tow Date Time Depth Strained Hall Percent Total Total Society Hall Society H	Line Station deg. min. Gode yr. mo. day (PST) (m) foundate and foundation deg. min. Gode yr. mo. day (PST) (m) foundation deg. min. Gode yr. mo. day (PST) (m) foun. m) Factor Sorted Larvae Eggs 33.0 32 40.5 118 11.5 5.5 JD 69 010 7 1645 210 661 3.18 100.0 51 4 137 51.5 JD 69 010 7 1232 212 673 3.12 100.0 51 4 137 51.5 JD 69 010 7 1232 212 673 3.12 100.0 51 71 37 51.5 JD 69 010 7 1232 212 673 3.12 100.0 51 71 37 51.5 JD 69 010 8 0122 212 673 3.12 100.0 51 71 37 51.5 JD 69 010 8 0122 212 673 3.12 100.0 560 2 51.0 51.0 51.0 51.0 51.0 51.0 51.0 51.0	Line Station Lat.(N) Long.(W) Ship Tow Date Time Depth Strained Ball Percent Total Total Geg. mln. Code; mln.	Line Station Lat.(N) Long.(W) Ship Tow Date Time Public Stand-Lat.(N) Long.(W) Ship Tow Date Time Depth Strained Hall Built Depth Strained Hall Built Depth Strained Hall Depth Strained H	The Station lat.(N) Long.(W) Ship Tow Date Time Depth Static Hall Decrent Total Depth Station deg. min. Code yr. mo. day (FST) (Cl. m) Factor Sorted Larvae Eggs 23.0 46.0 32 30.0 118 31.5 JD 69 101 07 1645 213 666 3.20 100.0 514 173 175 175 175 175 175 175 175 175 175 175	Line Station deg. min. Code yr. mo. day. Fine Depth Strained Ball Percent Total Total Gas. min. Code yr. mo. day. FST (m) (m) Factor Sorted Larvae Eggs 20.0 doi: 0.35.0 31.0 doi: 0.109.(W) Ship Tow Date Time Depth Strained Ball Percent Total Larvae Eggs 20.0 doi: 0.32 doi: 0.116 j.1.8 doi: 0.32 doi: 0.116 j.1.8 doi: 0.32 doi: 0.116 j.1.8 doi: 0.32 doi: 0	Line Station deg, min. Code yt. mo. day (PST) (m). Stand-Gard Mail Degree of Sorted Larvae Eggs (min. Code yt. mo. day (PST) (m) cong. (min. Code yt. mo. day (min	The Station Lat. (R) Long. (W) Ship Tow Date Time Day Station Lat. (R) Cong. (W) Ship Tow Date Time Day Strained Baul Percent Total Society Strained Baul Percent Society Strained Society Strained Baul Society Strained Society Society Strained Society Strained Society Strained Society Society Strained Society Society Strained Society Strained Society Society	In Station deg. (#) Long.(#) Tow Date Time Pepth Strained Hall Percent Total Total 40. (#) Long.(#) Tow Date Time Pepth Strained Hall Percent Total Total 40. (#) Long.(#) Tow Date Time Pepth Strained Hall Percent Total Total 40. (#) Long.(#) Tow Date Time Pepth Strained Hall Percent Total Total 40. (#) Long.(#) Long.(#) Tow Date Time Pepth Strained Hall Percent Total Total 40. (#) Long.(#) Long.(

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	Total Eggs	30 30 8 1 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	
	Total Larvae	1 1 2 2 2 2 3 3 4 1 4 1 4 1 4 1 4 1 4 4 1 4 4 4 4 4	
	Percent Sorted		
	Stand- ard Haul Factor	23.100 66 88 88 3.2 2.1 2.0 3.3 2.1 2.0 3.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4	
	Vol. Water Strained	00000000000000000000000000000000000000	
1069	Tow Depth 9	22 22 22 22 22 22 22 22 22 22 22 22 22	
Cruise (Time (PST)	10000000000000000000000000000000000000	
CalGOFI Cr	Tow Date	6699 011 222 0	
	Ship Code y	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	
	Long. (W) deg. min.	1116 02.0 1116 02.0 1117 0.0 1117 0.0 1118	
	Lat.(N) deg. min.	30 27.	
	Station	100 100 100 100 100 100 100 100	
	Line	100.00 100.00	

	Total Larvae	64
	Percent Sorted	100.0
	Stand- ard Haul Factor	3.06
	Vol. Water Strained (cu. m)	676 701
1069	Tow Depth	207
Cruise	Time (PST)	0240
CalCOFI Cru	Tow Date yr. mo. day	69 01 29 69 01 28
	Ship	AX
	Long. (W) deg. min.	116 34.2
	Lat.(N) deg. min.	27 18.8 26 56.5
	Line Station	0.07
	Line	120.0

Total Eggs

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	Total Eggs	1 230 1 1 230 1 1 230 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
	Total Larvae	34
	Percent Sorted	
	Stand- ard Haul Factor	1222222222222222222222222222222222222
	Vol. Water Strained	6652 6673 6773 6773 6773 6773 6773 6773 677
6902	Tow Depth	1109 1209 1209 1309 1309 1309 1309 1309 1309 1309 13
Se	Time (PST)	0900 2325 2325 2325 00255 00255 00255 00235 00235 00235 00235 00235 00335 00335 00325
CalCOFI Crui	Tow Date yr. mo. day	69 01 26 69 01 26 69 01 26 69 01 26 69 01 27 69 01 27 69 01 27 69 01 29 69 02 02 02 69 02 02 69 02 02 69 02 02 69 02 02 69 02 03 69 02 03
	Ship	
	Long.(W) deg. min.	124 27.8 125 23.0 125 23.0 125 46.0 126 54.5 127 40.0 128 42.0 128 20.0 127 28.0 128 43.0 128 43.0 127 58.0 128 43.0 128 43.0 129 44.5 129 44.5 129 22.0 129 22.0 129 22.0 129 22.0
	Lat.(N) deg. min.	411 23 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
	Station	38 .0 .440.0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0
	Line	44444444444444444444444444444444444444

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	Total Eggs	2002 2002 3002 10184 101336 10	
	Total Larvae	33360 11 23360 12 22 330 12 23360 13 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	
	Percent Sorted		
	Stand- ard Haul Factor	EBENZAZZEJENENTEZ TENENZEZZZZEZENENZEZZZZZZZZZZZZZ	
	Vol. Water Strained (cu. m)	66 6 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	
2069	Tow Depth (m)	2003 2003 2003 2003 2003 2003 2003 2003	
Cruise	Time (PST)	11305 11305 11305 11230	
CalCOFI Cr	Tow Date yr. mo. day	669 002 004 004 004 004 004 004 004 004 004	
	Ship	ME AXX ME	
	Long.(W) deg. min.	1228 48.5 1224 46.0 1224 46.0 1224 46.0 1226 12.0 1226 12.0 1227 1	
	Lat.(N) deg. min.	336 23.0 336 23.0 337 22.0 337 22.0 338 22	
	Station	120 120 120 120 120 120 120 120	
	Line S	557.00 667.00 677.00 677.00 677.00 677.00 677.00 677.00 677.00 677.00 677.00 677.00 677.00 677.00	

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	Total	440 644 644 112 122 124 124 125 126 126 126 126 126 126 126 126 126 126	
	Total Larvae	3940 1040	
	Percent Sorted		
	Stand- ard Baul Factor	######################################	
	Vol. Water Strained (cu. m)	66222 66222 66232 66232 6632 66332 6	
1	Tow Depth	22010 20010 20010 20010 20010 20010 20010 20010 20010 20010 20010 20010 20010 20010 20010 20010 20010 20010 20010 20010 20010	
	Time (PST)	10644 10225 10225 10225 10225 10225 10225 10225 10225 10225 10225 10226	
1700100	Tow Date yr. mo. day	669 002 209 002 209 003 003 003 003 003 003 003 003 003 0	
	Ship	AX AMERICAN AND AND AND AND AND AND AND AND AND A	
	Long. (W) deg. min.	124 124 125 126 127 128 128 128 128 128 128 128 128 128 128	
	Lat.(N) deg. min.	33 33 33 33 33 33 33 33 33 33 33 33 33	
	Station	880 1100 1200 1100 1200 1	
	Line	67.0 67.0 70.0 70.0 70.0 70.0 70.0 70.0	

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	Total Eggs	11382 18382 18490 1944 11444 11444 11382 1111	
	Total	7089 7089 333 333 347 111 1111 1111 1111 1111 111	
	Percent Sorted		
	Stand- ard Baul Factor	EUERREEEREEEREEREEREEREEEREEREEREEREEREE	
	Vol. Water Strained (cu. m)	6653 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	
6902	Tow Depth	2012 2012 2013 2014 2016 2016 2017 2018 2017 2018 2018 2019 2019 2019 2019 2019 2019 2019 2019	
ise	Time (PST)	00000000000000000000000000000000000000	
CalCOFI Cru	Tow Date yr. mo. day	699 002 117 699 002 117 699 002 119 699 002 117 699 002 117 699 002 117 699 002 117 699 002 118 699 002 116 699 002 116 699 002 116 699 002 116 699 002 117 699 002 118 699 002 118	
	Ship Code	99×999999999999	
	Long. (W) deg. min.	121 34 122 35 0 122 16 2 122 16 2 122 16 2 122 16 2 122 2 3 3 9 0 123 3 3 9 0 123 3 9 0 124 2 0 125 2 2 127 2 4 4 118 2 9 0 128 2 9 0 129 2 9 0 120 2 1 2 1 120 2 1 2 1 121 2 1 3 1 122 2 4 4 123 3 9 0 123 3 9 0 124 2 0 125 2 1 126 2 1 127 2 4 4 118 2 9 0 118 2 9 0 11	
	Lat.(N) deg. min.	322333333223333332233344233334444444444	
	Station	110000 11000 110000 110000 110000 110000 110000 110000 110000 110000	
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	Total	1263 2008 310508 310508 310508 310508 310508 3106 3106 3106 3106 3106 3106 3106 3106
	Percent Sorted	
Stand-	ard Haul Factor	
Vol.	Water Strained (cu. m)	5000 5000
	Tow Depth	22222222222222222222222222222222222222
	Time (PST)	1842 00215 00215 00215 00215 00215 0052 0052
	Tow Date yr. mo. day	69 002 114 69 002 117 69 003 110 69 003 110 69 002 114 69 002 117 69 002 118 69 002 119 69 002 20 69 002 20 60 002 2
	Ship	2828888888888888888888888888888888888
	Long. (W) deg. min.	119 57.5 120 38.5 121 19.5 122 10.0 123 10.0 117 21.8 117 21.8 118 37.0 118 37.0 119 09.0 119 09.0 110 04.7 1117 15.2 1117 16.2 1118 24.0 1118 24.0 1119 10.0 1119 10.0 1119 10.0 1119 10.0 1119 26.8 1117 10.0 1118 24.0 1119 10.0 1119 10.0 1119 10.0 1110 10.0 1
	Lat.(N) deg. min.	32 25.0 32 25.0 32 16.2 32 16.2 32 16.2 33 2 16.2 34 44.5 35 16.2 36 10.0 37 16.2 38 2 10.0 38 2 10.0 38 2 10.0 38 2 10.0 38 2 10.0 38 3 1 10.0 38 2 10.0 38 3 1 10.0 39 30 00.0 30 30 00.0 30 30 00.0 31 10.0 32 10.0 33 1 10.0 34 0.0 35 10.0 36 10.0 37 10.0 38 10.0
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	Total Eggs	435 1325 1325 1427 1427 1427 1427 1427 1427 1427 1435 1435 1447 1447 1447 1447 1447 1447 1447 144
	Total Larvae	1057 1050
	Percent Sorted	
	Stand- ard Haul Factor	0.000000000000000000000000000000000000
	Vol. Water Strained (cu. m)	00000000000000000000000000000000000000
206	Tow Depth	22222 222222 222222 222222 222222 22222 2222
cinise	Time (PST)	11425 11425 11485 11485 11485 11485 11485 11485 11486
Calcura Cr	Tow Date yr. mo. day	66999999999999999999999999999999999999
	Ship	888888888888888888888888888888888888888
	Long. (W) deg. min.	1118 02.0 1119 02.0 1116 044.0 1116 12.0 1117 000.5 1117 18.0 1118 21.0 1118 11.0 1118 11.0
	Lat.(N) deg. min.	330 015 330 0229 448.05 330 227.88.00 229 322.00 229 322.00 229 322.00 229 222.30 229 222.30 229 222.30 229 222.30 229 222.30 229 222.30 229 222.30 230 220 220 240 220 220 250 250 250 250 250 250 250 250 250 250 250 250 250 250 2
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	Total Eggs	26 26 26 26 26 26 27 20 20 20 20 20 20 20 20 20 20	
	Total Larvae	2888 33 4 1186 8 8 9 3 4 2 8 1 1 1 8 1 1 1 1 8 1 1 1 1 1 1 1 1 1	
	Percent Sorted		
	Stand- ard Haul Factor		
	Vol. Water Strained	22 22 22 23 24 24 24 25 25 25 25 25 25 25 25 25 25 25 25 25	
206	Tow Depth	22222222222222222222222222222222222222	
ise 6	Time (PST)	2000 20130 20130 20130 20130 20130 20130 20101 2	
CalCOFI Cru	Tow Date yr. mo. day	66999999999999999999999999999999999999	
	Ship	666266262626262666666666666666666666666	
	Long. (W) deg. min.	1115 33.0 0 1115 5 3.0 0 1111 5 3.0 0 111 5 3.0 0 111 5 3.0 0 111 5 3.0 0 111 5 3.0 0 111 5 3.0 0 111 5 3.0 0 111 5 3.0 0 111 5 3.0 0 111 5 3.0 0 111 5 3.0 0 111 5 3.0 0 11 5 3.0	
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	Total Eggs	22 133 133 133 133 133 133 133 133 133 1	
	Total Larvae	11000000000000000000000000000000000000	
	Percent Sorted		
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	Vol. Water Strained (cu. m)	6652 6658 6658 6658 6658 6658 6658 6658	
6904	Tow Depth	2015 2015 2016 2017 2018 2018 2018 2019 2019 2019 2019 2019 2019 2019 2019	
Cruise (Time (PST)	11120 001550 001120 001120 001120 001120 001120 00120	
CalCOFI Cri	Tow Date yr. mo. day	66999999999999999999999999999999999999	
	Ship Code	666666666666666666666666666666666666666	
	Long.(W) deg. min.	122 57 0 0 122 122 339 0 0 122 122 335 0 0 122 122 122 122 122 122 122 122 122	
	Lat.(N) deg. min.	33333333333333333333333333333333333333	
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Total

	Total Larvae	1041 130113 10
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	Vol. Water Strained (cu. m)	6690 6690 6690 6690 6690 6690 6690 6690
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CalCOFI Cruise 6	Time (PST)	00000000000000000000000000000000000000
	Tow Date yr. mo. day	66999999999999999999999999999999999999
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	Lat.(N) deg. min.	32 20 33 20 34 20 35 20 36 20 37 20 38 20 38 20 38 20 38 20 38 20 38 20 38 20 38 20 38 20 39 20 30 20 30 30 30
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Tow Depth	205 200 34	198 198 199	204 211 219 209 42	204 210 211	940 NO	203 215 215 43 201 201 202 202
Time (PST)	03	500004	911687	113	61 61 62 62 62 62 62 62 62 62 62 62 62 62 62	0739 0230 2320 2350 0115 0710 0950 1355 11955
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Long.(W) deg. min.	17 11. 17 48. 14 36.	15 30. 16 09.	14 29. 15 49. 15 48.	13 28. 13 49. 14 07.	15 24. 12 48. 13 07.	1113 48.0 1114 23.8 1115 10.6 1112 10.0 1112 45.5 1113 24.2 1114 03.2
Lat.(N) deg. min.	6 52.7 26.7 26.	7 08. 6 58. 6 38.	66 66 66 66 66 66 66 66 66 66 66 66 66	66 188. 5 5 8 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9	55 65 55 55 55 55 55 55 55 55 55 55 55 5	255 14.3 255 14.3 255 14.3 255 13.8 255 13.9 256 19.9 24 58.1 24 38.9
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CalCOFI Cr		Tow Date	69 05 24 69 05 25	9 05 2	9 05 2	9 05 2	9 05 2	9 05 2	9 05 2	9 05 2	9 05 2	9 05 2	9 05 2	9052	9 05 2	9 05 2	9 05 2 9 05 2	9 05 2	9 05 2	0 05 1	9 05 1	0 05 1	005 1	9 05 1	9051905	9 05 1	9 05 1	9 05 1	9 05 1
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		Long. (W) deg. min.	122 53.1	23 37.	23 58.	25 04.	25 47.	22 36.	23 07.	23 55.	21 56.	22 05.	22 47.	23 09. 23 25.	24 55.	21 54.	22 22. 22 45.	23 05.	23 47.	24 30. 25 12.	25 54.	21 28.	$\frac{21}{22}$ $\frac{58}{19}$.	22 40.	23 22. 24 04.	20 43.	21 13.	21 55.	22 16.
		Lat.(N) deg. min.	37 57.5	7 37.	7 27.	6 56.	7 23.	7 19.	7 05.	6 42	6 52.	6 48.	6 28.	6 18. 6 08.	5 28.	6 06.	5 43.	5 32.	5 13.	4 53.	4 13.	31.	5 08.	58.	4 38. 4 18.	5 08.	54.	4 34.	4 24.
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CalCOFI Cruise 6905		(cn. m)	550 500 500 500 500 500 500 500
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271 671 99 1117 135 305 Total Eggs Total Larvae 321 195 162 146 60 77 Percent Sorted 100.0 1000.0 1000.0 1000.0 ard Haul Factor 3.04 3.20 3.60 3.23 2.96 Stand-Vol. Water Strained (cu. m) 698 652 591 636 686 668 Tow Depth 213 208 212 206 206 203 208 6905 Time (PST) CalCOFI Cruise 1405 1722 2015 0040 0522 1008 Tow Date yr. mo. day 06 06 07 07 Ship Code 666666 Long. (W) deg. min. 34.0 34.0 34.5 34.5 118 119 119 120 120 Lat.(N) deg. min. 10.0 000.0 50.0 10.0 331 Line Station 50.0 55.0 60.0 90.0

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Total Eggs	2222 2322 2322 2322 2322 2323 2323 232
Total Larvae	2046 711 1080 1080 127 127 1869 1900 1183 101 101 101 101 104 104 104 104 104 104
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Vol. Water Strained (cu. m)	1113 6696 6616 6616 6617 6617 6617 6617 6617
Tow Depth	22222222222222222222222222222222222222
Time (PST)	1140 11515 1
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Long. (W) deg. min.	1117 04.7 1117 04.7 1117 27.5 1118 28.5 1118 28.5 1118 28.5 1118 28.5 1119 50.0 1118 10.0 1118 27.0 1118 27.0 1118 27.0 1118 24.0 1118 25.0 1118 25.0
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	Total Eggs	23.33.3 1.33.3 2.144.3 2.165.3 2.16
	Total	1339 1339
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CalCOFI Cruise 6906	Vol. Water Strained	6656 6658 6658 6658 6658 6658 6658 6658
	Tow Depth	22222 222006 222000 220000 220000 220000 220000 220000 220000 220000 23000 200
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	Tow Date yr. mo. day	69 06 15 69 06 15 69 06 15 69 06 15 69 06 15 69 06 16 15 69 06 16 17 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18
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	Long.(W) deg. min.	1116 1955 1116 399.5 1117 339.5 1118 183.0 1115 183.0 1115 183.0 1117 183.0 1118 180.0 1118 180.0
	Lat.(N) deg. min.	29 36.5 29 126.8 29 26.8 28 36.5 29 126.8 20 126.8 20 224.2 20 126.5 20 126.5 20 224.2 20 225.2 20 226.2 20 226.2
	Station	44800000000000000000000000000000000000
	Line	1100.0 11100.0 11100.0 11100.0 11133.0 11133.0 11133.0 11133.0 11133.0 11130.0 11200.0 11200.0 11200.0 11233.0 11233.0

	Total	2312 2918 2002 11234 2007 3660 1009 1009 1009 1009 1009 1009 1009 1
	Total	1965 1965 136 240 240 648 648 318 340 36 36 36 36 36 36 36 37 36 37 38 38 38 38 38 38 38 38 38 38 38 38 38
	Percent Sorted	
	Stand- ard Haul Factor	22.20 23.33.30 23.
	Vol. Water Strained	186 634 662 662 663 1663 1663 663 673 673 673 673 673 673 673 673
9069	Tow Depth	22002 220093 20003
	Time (PST)	11213 0835 0835 0315 0315 0315 1755 1755 0832 0832 0832 0832 0832 0833 0832 010 1320 1430 1915 01132
CalCOFI Cruise	Tow Date yr. mo. day	69 06 25 69 06 25 69 06 25 69 06 25 69 06 25 69 06 25 69 06 27 69 06 27
	Ship	86868686868686 6868686868686
	Long.(W) deg. min.	114 005.2 1114 48.5 1115 09.5 1113 29.0 1113 29.0 1115 24.0 1115 24.0 1117 47.0 1117 48.0 1118 24.0 1119 24.0 1119 24.0 1119 24.0 1119 19.0 1119 19.0 1119 19.0 1119 19.0 1119 19.0
	Lat.(N) deg. min.	26 5 3 3 5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
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Carcor Cr	Tow Date yr. mo. day	69 07 28 69 07 28 69 07 28	9 07 2 9 07 2	9 07 2	9 07 2	9 07 2	9 07 2	9 07 2 9 07 2	9 07 2	9 07 2	9 07 2	9 07 2	9 07 2 9 07 2	9 07 2	9 07 2	9 07 2	9 07 2	9 07 2	9 07 2	9 07 2	9 07 2	9072	9 07 2	9 07 2	9 07 2	
	Ship Code	555	55	66	988	36	351	86	55	SEF	SEF	200	9,5	35	36	55	SE	36	35	35	g	66	6	388	386	3
	Long. (W) deg. min.	122 53.1 123 01.7 123 15.0	23 37. 23 58.	24 21. 25 04.	22 27.	22 50.	23 33.	23 55. 25 20.	21 56.	22 26.	23 09.	24 12.	24 55. 21 43.	21 54.	22 23. 22 45.	23 06.	24 30.	21 28.	22 19.	22 38. 23 21.	24 04.	$20 \ 43.$ $20 \ 56.$	21 13.	21 55.	22 57.	
	Lat.(N) deg. min.	37 57.5 37 54.0 37 47.0	7 36.	7 17.	6 37. 7 23.	3 17.	7 03. 6 53.	6 42. 6 03.	6 52.	6 39.	6 18.	5 48.	5 28.	6 06.	5 43.	5 33.	4 53.	5 31.	5 08.	4 37.	4 18.	5 08. 5 02.	4 55.	4 32.	4 04.	
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	Total Eggs	22 132 142 152 162 163 164 165 165 165 165 165 165 165 165 165 165	
	Total Larvae	1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
	Percent Sorted		
	Stand- ard Haul Factor	### ### ##############################	
	Vol. Water Strained (cu. m)	354 356 366 366 366 366 366 366 366	
1060	Tow Depth	2004 2004 2004 2006 2006 2006 2007 2007 2007 2007 2007	
aern	Time (PST)	00040 00528 00529 00529 00529 00520 00447 00423 00447 00410	
carcor of	Tow Date yr. mo. day	699 07 21 699 07 21 699 07 21 699 07 221 699 07 221 699 07 221 699 07 221 699 07 221 699 07 119 699 07 117 699 07 118 699 07 118	
	Ship	686666666666666666666666666666666666666	
	Long. (W) deg. min.	120 32.5 120 36.5 120 36.5 120 36.0 121 30.0 122 32.0 119 59.0 119 22.0 119 22.0 118 22.0 120 28.5 120 08.5 120 08.5 120 08.5 120 08.5 120 22.0 121 24.5 122 39.0 123 39.0 124 00.0 125 39.0 127 00.0 128 22.5 129 120 120 120 120 120 120 120 120 120 120	
	Lat. (N) deg. min.	33 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	
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	Total	232 242 242 242 242 242 242 242 242 242
	Total	1175 88 88 89 80 80 80 80 80 80 80 80 80 80 80 80 80
	Percent Sorted	1000 1000 1000 1000 1000 1000 1000 100
	Stand- ard Haul Factor	WASHWASHWASHWASHWASHWASHWASHWASHWASHWASH
	Vol. Water Strained (cu. m)	060600 060000 060000 060000 060000 060000 060000 060000 060000 060000 06
907	Tow Depth	2000 2003 2003 2003 2003 2003 2004 2004
ise 6	Time (PST)	0730 11610 21105 21105 0125 0125 01610 13110 1228 02228 02228 0145 0145 01933 11518 11518 11518 11518 11518 01602 11603 11603 11718
CalCOFI Cru	Tow Date yr. mo. day	69 07 111 69 07 111 69 07 112 69 07 111 69 07 112 69 07 112 69 07 112 69 07 112 69 07 113 69 07 113 69 07 113 69 07 113 69 07 113 69 07 113 69 07 113 69 07 113 69 07 113 69 07 113 69 07 113 69 07 113 69 07 113 69 07 113 69 07 113 69 07 113 69 07 113 69 07 113 69 07 113 69 07 114 69 07 114 69 07 114 69 07 114 69 07 114 69 07 115 69 07 114 69 07 115 69 07
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	Long.(W) deg. min.	1118 51.0 1120 15.0 120 15.0 121 34.5 122 34.5 122 34.5 123 35.0 117 04.5 117 06.9 117 27.6 118 31.0 118 31.0 118 50.5 119 52.5 110 12.0 118 46.7 1116 24.6 1117 25.0 1119 05.7 1119 05.7 1119 05.7 1119 05.7
	Lat.(N) deg. min.	32 33 33 33 33 33 33 33 33 33 33 33 33 3
	Station	550.0 50.0 50.0 50.0 1120.0 120.
	Line	993.0 993.0 993.0 993.0 993.0 997.0 997.0 997.0 1000.0 1000.0 1000.0 1003.0 1003.0 1003.0 1003.0

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	Total Eggs	11.020 12.020 11.020 12.020 12.020 13.020 14.020 15.020 16.020 17.020 18.020 18.020 19.020
	Total Larvae	1
	Percent Sorted	1000 1000 1000 1000 1000 1000 1000 100
	Stand- ard Haul Factor	48888868488684886888888888888888888888
	Vol. Water Strained (cu. m)	5000 6000
2069	Tow Depth	22022 2022 2022 2022 20222 20222 20222 20222 20222 20222 20222 20222 202
Cruise (Time (PST)	11220 009251 009251 009251 009251 009251 009252 009252 009252 009252 009252 009252 009252 009252 009252 009252
Calcori Cri	Tow Date yr. mo. day	699 07 115 699 07 115 699 07 115 699 07 115 699 07 115 699 07 115 699 07 115 699 07 115 699 07 115 699 07 115 699 07 115 699 07 117 119 699 07
	Ship	SARARARARARARARARARARARARARARARARARARAR
	Long. (W) deg. min.	1116 41 1117 221.7 1117 221.7 1118 011.4 1118 011.4 1118 011.4 1116 199.3 1116 199.3 1118 19.7 1118 19.7 1118 19.7 1118 19.7 1118 19.7 1118 19.7 1118 19.7 1119 19.3 1119 1
	Lat.(N) deg. min.	30 22990010.2 22990010.3 22990010.3 22990010.3 22900010.3 229000010.3 22900000000000000000000000000000000000
	Station	4488967888884488978888888888888888888888
	Line	107.0 107.0

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		Total	1375 1466 1786 1786 1786 1786 1786 1786 1877 1876 1876
		Total	25 14 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
		Percent Sorted	00000000000000000000000000000000000000
	St	ard Haul Factor	######################################
	Vol.	Water Strained (cu. m)	6623 6623 6623 6639 6639 6639 6639 6639
2069		Tow Depth	2010 2011 2011 2012 2013 2012 2012 2012
Cruise 6		Time (PST)	1205 11855 11855 11855 11855 11855 11850 11844 11815 1
CalCOFI Cr		Tow Date yr. mo. day	69 07 22 69 07 22 69 07 22 69 07 22 69 07 22 69 07 22 69 07 22 69 07 22 69 07 22 69 07 22 69 07 22 69 07 22 69 07 25 69 07 27 27 27 27 27 27 27 27 27 27 27 27 27
		Ship	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
		Long. (W) deg. min.	117 49.0 1114 336.0 1114 336.0 1115 10.6 1115 10.6 1115 10.6 1115 09.0 1113 21.0 1113 28.8 1112 40.2 1113 26.2 1113 26.3 1113 26.3 1113 26.3 1113 26.3 1113 14.0 1113 14.0 1113 14.0 1113 14.0 1113 14.0 1113 14.0
		Lat.(N) deg. min.	226 32. 227 226 32. 227 226 32. 227 226 32. 226 226.00 226 58.11 226 58.12 226 58.12 226 58.12 226 58.12 226 58.12 226 58.12 226 58.13 3.25 58.13 3.25 58.13 3.25 58.13 3.25 58.13 3.25 58.13 3.25 58.13 3.25 58.13 3.25 58.13 5.25 58.13 5.25 58.13 5.25 58.13 5.25 58.13 5.25 58.13 5.25 58.13 5.25 58.13 5.25 58.13 5.25 58.13 5.25 58.13 5.25 58.13 5.25 58.13 5.25 58.13 5.25 58.13 58.
		Station	800 800 800 800 800 800 800 800
		Line	1220.0 1223.0 1223.0 1223.0 1223.0 1227.0 1227.0 1237.0 1333.0 1333.0 1337.0 1337.0 1337.0

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	Total	661 100 100 100 100 100 100 100 100 100
	Total Larvae	21
	Percent Sorted	
	Stand- ard Haul Factor	89999999999999999999999999999999999999
	Vol. Water Strained	00000000000000000000000000000000000000
8069	Tow Depth	2008 2008 2008 2009 2009 2009 2009 2009
nise	Time (PST)	00430 00430 00430 004103 004103 004103 004103 004103 004103 004103 00440
CalCOFI Cru	Ship Tow Date Code yr. mo. day	AXX 699 08 10 AXX 699 08 11 AXX 699 08 21 AX
	Long.(W) Sk deg. min. Cc	11220
	Lat.(N) deg. min.	33333333333333333333333333333333333333
	Station	550 550 660 660 660 660 660 660
	Line	660.00 660.00 660.00 660.00 660.00 663.00 667.00 770.00 770.00 773.00 773.00 777.00 777.00 777.00

	Total	2011 2023 2023 3037 2022 3037
	Total Larvae	20 30 40 10 10 10 10 10 10 10 10 10 1
	Percent Sorted	
	Stand- ard Haul Factor	22 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
	Vol. Water Strained	\$2000000000000000000000000000000000000
8069	Tow Depth (m)	202 202 203 203 203 203 203 203 203 203
Cruise 6	Time (PST)	00153 00153 00153 00153 00153 00153 00153 00153 00153 00153 00153 00153 00153 00153 00153 00153 00153 00153 00153 00153
CalCOFI Cru	Tow Date yr. mo. day	6699 0088 888 83 83 83 83 83 83 83 83 83 83 83
	Ship Code	**************************************
	Long. (W) deg. min.	122 1122 123 338 0 0 122 1220 332 122 1220 332 0 0 122 122 122 122 122 122 122 122 12
	Lat.(N) deg. min.	33333333333333333333333333333333333333
	Station	00000000000000000000000000000000000000
	Line	77777777777777777777777777777777777777

	Total	Larvae	9	7	14
	Percent	Sorted	100.0	100.0	100.0
Stand-	ard	Factor	2.89	3.01	2.76
Vol	Water	(cn. m)	629	658	671
8069	Tow	(田)	190	198	185
Cruise	_		1545	1045	0230
CalCOFI Cr	Tow Date	yr. mo. day	20 60 69		60
		Code y	AX	AX	AX
	Long. (W)	deg. min.	120 17.0		
	Lat.(N)	deg. min.		31 09.0	30 52.5
		Line Station	70.0	80.0	0.06
		Line	93.0	93.0	93.0

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	Total Eggs	44 24 24 24 24 24 24 24 24 24 24 24 24 2
	Total Larvae	22 1010 1010 1010 1010 1010 1010 1010 1
	Percent	
	Stand- ard Haul Factor	22242222222222222222222222222222222222
	Vol. Water Strained (cu. m)	6060933255599999999999999999999999999999999
6069	Tow Depth	111 1934 1934 1933 1933 1933 1933 1933 1
ise	Time (PST)	11515 11515 11516 11516 11516 11516 11516 11516 11516 11516 1160 1160
CalCOFI Crui	Tow Date yr. mo. day	66999999 66999999 66999999 66999999 6699999 6699999 6699999 6699999 6699999 6699999 6699999 6699999 6699999 6699999 6699999 6699999 6699999 6699999 6699999 6699999 66999999 6699999 6699999 6699999 6699999 6699999 6699999 66999999 6699999 6699999 6699999 6699999 6699999 6699999 66999999 6699999 6699999 6699999 6699999 6699999 6699999 66999999 6699999 6699999 6699999 6699999 6699999 6699999 66999999 6699999 6699999 6699999 6699999 6699999 6699999 66999999 6699999 6699999 6699999 6699999 6699999 6699999 66999999 6699999 6699999 6699999 6699999 6699999 6699999 66999999 6699999 6699999 6699999 6699999 6699999 6699999 66999999 6699999 6699999 6699999 6699999 6699999 6699999 66999999 6699999 6699999 6699999 6699999 6699999 6699999 66999999 6699999 6699999 6699999 6699999 6699999 6699999 66999999 669999 669999 669999 669999 669999 669999 669999 669999 669999 669999 669999 669999 669999 669999 669999 669999 66999
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	Long. (W) deg. min.	117 18 8 117 218 117 218 117 04.6 117 05.2 117 07.2 117 07.2 118 30.0 118 30.0 118 30.0 119 10.2 110 31.2 120 31.2 120 31.2 120 45.4 111 20 47.6 111 20 47.6 111 20 47.6 111 20 47.6 111 20 6.6 111 20
	Lat.(N) deg. min.	32 55. 32 55. 32 55. 32 55. 32 55. 32 55. 32 55. 32 55. 33 55. 34 55. 35 56. 36 57. 37 57. 38 57. 38 57. 39 57. 30 57.
	Station	75000000000000000000000000000000000000
	Line	993.0 993.0 997.0 997.0 997.0 997.0 1000.0 1000.0 1003.0 1003.0 1003.0 1003.0 1003.0 1003.0 1003.0 1003.0 1003.0 1003.0

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	Total	EL 920 1 21 41004011412 8408401 8425 9495 8455 9455 9455 9455 9455 9455 945	
	Total Larvae	25 25 25 25 25 25 25 25 25 25 25 25 25 2	J.
	Percent Sorted		00
	Stand- ard Haul Factor	21222222222222222222222222222222222222	. 7
	Water Water h Strained (cu. m)	66 69 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	d _i
6069	Tow Depth	81919999999999999999999999999999999999	
ise	Time (PST)	12003 12003	7.7
CalCOFI Cru	Tow Date yr. mo. day	66999999999999999999999999999999999999	9 09 3
	Ship	**************************************	AX
	Long.(W) deg. min.	1119 20 1116 322.4 1116 322.4 1117 318.2 1117 318.8 1117 318.8 1118 318.7 1118 318 318 318 318 318 318 318 318 318	14 59.
	Lat.(N) deg. min.	229 229 239 255 259 259 259 259 259 259 259 259 25	/ 14·
	Station	8 W W 4 4 W 0 V B V W W W 4 4 W 0 V B V W W W A 4 W 0 V B V W W W A 4 W 0 V B V W W W A 4 W 0 V D C D C D C D C D C D C D C D C D C D	7
	Line	00000000000000000000000000000000000000	٠,

	Total Eggs	17. 17. 18. 18. 18. 19. 19. 19. 19. 19. 19. 19. 19
	Total	2 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
	Percent Sorted	
	Stand- ard Haul Factor	33.022
	Vol. Water Strained (cu. m)	6635 6635 6635 6635 665 665 665 665 665
6069	Tow Depth	2013 2014 2014 2014 2015 2018 2018 2017 2017 2017 2017 2017 2017 2017 2017
	Time (PST)	1020 0330 0300 0300 0300 0300 0300 0300
CalCOFI Cruise	Tow Date yr. mo. day	69 09 30 69 09 30 69 09 30 69 09 30 69 09 30 69 09 30 69 10 001 69 10 001 69 10 002 69 10 003 69 10 003 69 10 003 69 10 003 69 10 003 69 10 003 69 10 003 69 10 004 60 10 004 60 10 004 60
	Ship	YXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
	Long.(W)	115 10.7 115 30.5 116 02.1 114 06.2 114 29.6 111 2 29.6 111 3 21.6 111 2 49.3 111 2 40.3 111 3 05.2 113 05.2 113 13 05.2
	Lat.(N) deg. min.	27 08.0 26 58.0 26 58.0 26 58.0 26 58.0 26 58.3 26 58.3 27 58.3 28 58.3 38 68 68 68 68 68 68 68 68 68 68 68 68 68
	Station	55000 6000
	Line S	123.0 123.0 127.0 127.0 127.0 127.0 130.0 130.0 133.0 133.0 133.0 133.0 133.0 133.0 133.0

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	Total	22 28 30 30 30 30 40 23 23 23 23 23 23 23 23 23 23 23 23 23
	Total Larvae	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	Percent Sorted	
	Stand- ard Haul Factor	CUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUU
	Vol. Water Strained (cu. m)	\$
076	Tow Depth	22000 20000 20000
Cruise 6	Time (PST)	000255 000258
Calcori Cri	Tow Date yr. mo. day	669 100 100 669 100 100 669 100 100 669 100 100 669 100 100 100 669 100 100 100 100 100 100 100 100 100 10
	Ship Code	666666666666666666666666666666666666666
	Long.(W) deg. min.	1222 1223 1223 1223 1223 1223 1224 1225 1225 1225 1227 1227 1227 1227 1227
	Lat.(N) deg. min.	334 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
	tation	88000000000000000000000000000000000000
	Line S	660.0 660.0 660.0 660.0 660.0 660.0 660.0 660.0 660.0 660.0 777.0 770.0 771.0 771.0

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	Total	100 100 100 100 100 100 100 100 100 100
	Total Larvae	88888999988899998989999999999999999999
	Percent Sorted	
	Stand- ard Haul Factor	
	Vol. Water Strained (cu. m)	66699999999999999999999999999999999999
910	Tow Depth	220099999888888888888888888888888888888
Cruise 6	Time (PST)	231 00520 00520 00520 00520 119424 111115 111115 111115 111113 111111
CalCOFI Cr	Tow Date yr. mo. day	699 100 22 699 100 23 699 100 24 699 100 25 699 10
	Ship Code 3	666666666666666666666666666666666666666
	Long. (W) deg. min.	123 39.0 120 35.5 120 36.5 121 320.0 122 32.0 122 32.0 123 132.0 123 133.0 120 24.0 120 24.0 122 24.0 122 24.0 122 24.0 122 24.0 122 24.0 122 24.0 122 24.0 122 24.0 123 130.0 124 00.0 125 39.0 127 11.7 117 31.7 118 31.5 118 31.0
	Lat.(N) deg. min.	332 256 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	Station	990 900 900 900 900 900 900 900
	Line S	77 00000000000000000000000000000000000

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	Total Eggs	100 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	Total Larvae	7.0012 410 44 48 88 88 88 88 88 88 88 88 88 88 88
	Percent Sorted	
	Stand- ard Haul Factor	332223323232323232323232333323233333333
	Vol. Water Strained (cu. m)	6688444289889999999999999999999999999999
910	Tow Depth	22 222235 222235 222235 22223 222
Cruise 6	Time (PST)	114701 114701 114701 114701 114701 11613 1
CalCOFI Cru	Tow Date yr. mo. day	6699100 223 3 3 3 3 3 5 6 6 6 6 6 6 6 6 6 6 6 6 6
	Ship	SARARARARARARARARARARARARARARARARARARAR
	Long. (W) deg. min.	1118 52 1120 3344 1122 134445 1122 134445 1117 00435 1117 00435 1118 068 1118 069 1118 069 1118 069 1118 069 1118 069 1118 069
	Lat.(N) deg. min.	332 10.0 331 30.0 331 30.0 330 30.0 331 30.0 332 110.0 333 110.0 334 15.6 337 10.0 338 11.0 339 10.0 330
	Station	0.000 0.000
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	Total	20 20 31 31 31 31 31 31 31 31 31 31
	Total	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	Percent Sorted	
	Stand- ard Haul Factor	8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9
	Vol. Water Strained	0655 0709
016	Tow Depth	22017 22017
Cruise 6	Time (PST)	114230 0082455 0082455 00826 00826 008
CalCOFI Cru	Tow Date yr. mo. day	669 10 27 669 10 27 669 10 27 669 10 27 669 10 27 669 10 27 669 10 28 669 10 30 669 10 30 669 10 30 669 10 30 669 10 31 669 10 31
	Ship	*** *** *** *** *** *** *** **
	Long. (W) deg. min.	1116 42.3 1117 412.8 1117 42.0 1118 011.4 1118 191.0 1115 48.8 1116 199.7 1116 199.7 1116 199.7 1118 198.6 1118 198.6 1118 198.1 1118 198.1 118 198.1 118 198.1 118 198.1 118 198.1 118 198
	Lat.(N) deg. min.	30 111 22 22 341 0 0 11 0 0 11 0 0 0 0 0 0 0 0 0 0 0 0
	Station	44400000000000000000000000000000000000
	Line	1007 1007 1007 1007 1007 1007 1007 1007

CalCOFI Cruise 6910

Total Eggs	2355 2355 2373 2373 2373 2373 2373 2373
Total Larvae	156 138 388 386 159 107 117 118 119 119 119 119 119 119 119 119 119
Percent Sorted	1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00
Stand ard Haul Factor	22222222222222222222222222222222222222
Vol. Water Strained (cu. m)	6533 6653 6653 6653 6653 6653 6653 6653
Tow Depth	210 210 210 210 210 210 210 20 20 20 20 20 20 20 20 20 20 20 20 20
Time (PST)	2215 0405 0500 0140 00625 00625 00625 00625 00517 1100 00517 00517 00517 00517 00631 11245 00735 00735 00735 00735 00735 00735
Tow Date yr. mo. day	69 111 03 69 111 03 69 111 03 69 111 03 69 111 04 69 111 05 69 111 06 69 111 06
Ship	YXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Long.(W) deg. min.	117 49.0 118 436.2 1114 396.2 1114 59.3 1115 10.6 1115 10.6 1116 15.5 1114 48.7 1115 28.6 1113 28.8 1112 28.8 1112 28.8 1113 28.0 1113 26.6 1113 45.1 1113 19.4 1113 19.4 1113 19.4 1113 19.4
Lat.(N) deg. min.	26 32 27 226 32 27 226 32 27 226 32 27 226 32 27 226 32 27 226 23 27 226 23 27 226 23 25 25 25 25 25 25 25 25 25 25 25 25 25
Station	65000000000000000000000000000000000000
Line	1230.0 1233.0 1233.0 1223.0 1223.0 1227.0 1227.0 1227.0 1237.0 1333.0 1333.0 1333.0 1333.0 1337.0 137.0

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	Total	22 23 23 23 23 24 23 23 23 23 23 23 23 23 23 23 23 23 23	
	Total Larvae	8 80 111218 0 1123 11 1 38 2 1 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	Percent Sorted		0000
	Stand- ard Haul Factor		0.0
	Vol. Water Strained (cu. m)	22222222222222222222222222222222222222	1457
2169	Tow Depth	7	
Cruise	Time (PST)	11350 11350 11066 11066 110631 11067 1	12
CalCOFI Cr	Tow Date r. mo. day	669 111 177 177 178 179 179 179 179 179 179 179 179 179 179	991112
	Ship Code y	** ** ** ** ** ** ** ** ** **	¥ ¥ ¥ ¥
	Long.(W) deg. min.	123 01.7 123 16.5 123 16.5 123 2 2 2 1.2 122 2 2 8 . 6 122 2 2 8 . 6 122 2 2 8 . 6 123 2 2 6 . 6 123 2 2 6 . 6 123 2 2 6 . 8 123 2 6 . 8 124 6 . 8 125 1 1 . 6 125 2 6 . 8 127 2 6 . 8 128 2 6 . 8 129 6 . 8 120 7 . 8 120 6 . 8 1	21 17. 21 34. 21 54. 22 15.
	Lat.(N) deg. min.	333 33 33 33 33 33 33 33 33 33 33 33 33	2 3 3 3 4 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5
	Station	552.0 552.0 552.0 560.0 560.0 66	0000
	Line	66000000000000000000000000000000000000	

Total	004000 448000 4 448000 4 460000 4 46000 4 46000 4 46000 4 46000 4 46000 4 46000 4 46000 4 46000 4 46000 4 46000 4 46000 4 46000 4 46000 4 46000 4 46000 4 460000 4 46000 4 46000 4 46000 4 46000 4 46000 4 46000 4 460000 4 46000 4 46000 4 46000 4 46000 4 46000 4 46000 4 46000 4 46000 4 46
Total	138 138 149 177 183 183 183 184 184 184 184 184 184 184 184 184 184
Percent	00000000000000000000000000000000000000
Stand- ard Haul Factor	33.25.00 33.
Vol. Water Strained (cu. m)	00000000000000000000000000000000000000
Tow Depth	11988 11988
Time (PST)	00115 001130 001130 00130 00222 002224 002224 00123 00123 0023 0023
Tow Date yr. mo. day	669991111256 669991111256 669991111256 669991111256 669991111256 669991111259 669991111330 6699111330 6699111330 6699111330 6699111330 6699111330 6699111330 6699111330 6699111330
Ship	222222222222222222222222222222222222222
Long. (W) deg. min.	1222 57.6 123 36.9 120 326.5 120 36.6 121 320.0 121 320.0 122 32.0 123 132.2 123 132.2 120 24.5 120 24.5 121 25.0 122 24.5 123 132.2 123 132.2 124 55.0 125 24.5 127 24.5 128 34.5 129 39.5 121 43.0 122 24.5 123 25.0 123 25.0 124 57.5 125 24.5 127 24.5 127 24.5 127 24.5 127 24.5 127 24.5 127 24.5 127 24.5 127 24.5 127 26.0 127 26.0 127 27.5 128 33.0 127 39.0 127 31.0
Lat.(N) deg. min.	332 238 33 33 33 33 33 33 33 33 33 33 33 33 3
Station	898787898788878887888788878887888788878
Line	77777777777777777777777777777777777777

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Total	100 100 100 100 100 100 100 100 100 100
Total Larvae	11
Percent Sorted	
Stand- ard Haul Factor	02111012200000000000000000000000000000
Vol. Water Strained (cu. m)	66693333333333333333333333333333333333
Tow Depth	222 222 2222 22222 22222 22222 22222 2222
Time (PST)	00700 11020 11020 111333 113333 113333 113333 113333 11340 110440 110440 110440 110440 110419 110100 110100 110100 110100
Tow Date yr. mo. day	66999999999999999999999999999999999999
Ship	866666666666666666666666666666666666666
Long.(W) deg. min.	1118 53.0 1120 14.0 1120 14.0 1121 14.0 1121 14.0 1117 17.0 1117 17.0 1117 17.0 1118 18.0 1119 18.0 1119 18.0 1119 18.0 1119 18.0 1110 17.0 1110 17.0
Lat.(N) deg. min.	33 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Station	0.000 0.000
Line	993.0 993.0 993.0 997.0 997.0 997.0 997.0 100.0 100.0 100.0 1003.0 1003.0 1003.0 1003.0 1003.0 1003.0

	Total	11
	Total	2010111031110111011101110111011101110111
	Percent	
	Stand- ard Haul Factor	2322222222222222222222222222222222222
	Vol. Water Strained (cu. m)	688 687 688 687 688 687 698 678 678 678 678 678 678 678 678 678 67
912	Tow Depth	22222222222222222222222222222222222222
Cruise 6	Time (PST)	00000000000000000000000000000000000000
CalCOFI Cru	Tow Date yr. mo. day	699 669 669 669 669 669 669 669 669 669
	Ship	54444444
	Long.(W) deg. min.	1117 42.0 1118 41.0 1119 20.0 1115 49.5 1116 19.5 1116 19.5 1116 19.5 1117 39.0 1118 13.0 1117 13.0 1118 14.0 1118 14.0 1118 14.0 1118 14.0 1118 14.0 1118 14.0 1118 14.0 1118 14.0 1118 14.0 1118 14.0
	Lat.(N) deg. min.	29 41.0 29 41.0 29 32.0 29 36.0 20 37.0 20
	Station	80000000000000000000000000000000000000
	Line	1007 1007 1007 1007 1007 1007 1007 1007

	Total Eggs	12 2 2 2 1 1 1 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 2 1 1 2 1
	Total	13 36 177 77 10 10 12 12 12 12 12 13 14 15 15 16 16 17 18 18 18 19 10 10 10 10 10 10 10 10 10 10 10 10 10
	Percent Sorted	
	Stand- ard Haul Factor	22222222222222222222222222222222222222
	Vol. Water Strained	1003 1003
6912	Tow Depth	2006 2006 2006 2008 2008 2007 2008 2008 2008 2008 2008
	Time (PST)	2017 2017 2017 2017 2017 0025 0015 2015 1135 0042 1153 1153 1153 1164 1162 0041 1162 0041 1163 1163
CalCOFI Cruise	Tow Date yr. mo. day	69 12 14 69 12 14 69 12 14 69 12 15 69 12 15 69 12 15 69 12 15 69 12 15 69 12 16 69 12 17 69 12 16
	Ship	666666666666666666666666666666666666666
	Long.(W) deg. min.	1114 40.0 1114 40.0 1115 111.5 1115 311.0 1116 092.2 1114 06.5 1113 29.0 1113 29.0 1113 24.0 1113 07.5 1113 48.0 1113 48.0 1113 48.0 1113 48.0 1113 48.0 1113 48.0 1113 48.0 1113 48.0
	Lat.(N) deg. min.	27 24 25 25 26 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	Station	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
	Line	1233.0 1233.0 1233.0 1237.0 1237.0 1237.0 1330.0 1333.0 1337.0

TABLE 2. Pooled occurrences of fish larvae taken during CalCOFI cruises in 1969.

Rank	Taxon	Occurrences
1	Engraulis mordax	880
2	Protomyctophum crockeri	717
3	Sebastes spp.	705
4	Citharichthys spp.	611
5	Triphoturus mexicanus	556
6	Lampanyctus spp.	550
7	Leuroglossus stilbius	498
8	Vinciguerria lucetia	479
9	Sternoptychidae	469
10	Disintegrated fish larva	458
11	Unidentified fish larva	422
12	Stenobrachius leucopsarus	390
13		361
14	Merluccius productus Bathylagus ochotensis	359
15		346
	Cyclothone spp.	333
16	Melamphaes spp.	329
17	Myctophidae	328
18	Bathylagus wesethi Tarletonbeania crenularis	277
19		269
20 21	Citharichthys stigmaeus	248
22	Trachurus symmetricus Lestidiops ringens	231
23	Bathylagus spp.	215
24	Stomias atriventer	214
25	Diogenichthys laternatus	210
25	Diogenichthys atlanticus	210
27	Icichthys lockingtoni	202
28	Sciaenidae	195
29	Chauliodus macouni	189
30	Symbolophorus californiensis	157
31	Lampanyctus ritteri	155
32	Ceratoscopelus townsendi	153
33	Gobiidae	138
34	Gonostomatidae	126
35	Idiacanthus antrostomus	114
36	Diaphus spp.	110
37	Argentina sialis	98
38	Scopelarchidae	93
39	Hygophum atratum	81
40	Bathylagus pacificus	80
40	Parophrys vetulus	80
40	Trachipteridae	80
43	Sardinops sagax	79
43	Diogenichthys spp.	79
45	Microstoma microstoma	73
46	Serranidae	72
47	Symphurus spp.	71
48	Pleuronichthys verticalis	66

TABLE 2. (cont.)

Rank	Taxon	Occurrences
49	Lyopsetta exilis	65
50	Hypsoblennius spp.	61
51	Paralichthys californicus	60
52	Myctophum nitidulum	59
53	Oxyjulis californica	58
54	Microstomus pacificus	56
55	Synodus spp.	54
55	Chromis punctipinnis	54
57	Hippoglossina stomata	52
58	Clinidae	51
59	Tetragonurus cuvieri	48
59	Gonichthys tenuiculus	48
61	Sebastolobus spp.	47
62	Ophidiiformes	45
62	Peprilus simillimus	45
64	Chiasmodontidae	41
65	Cottidae	40
65	Nansenia crassa	40
67	Scopelosaurus spp.	36
68	Ichthyococcus spp.	34
68	Ophidion scrippsae	34
70	Bathylagus milleri	33
71	Cololabis saira	32
71	Nansenia candida	32
73	Sarda chiliensis	30
73	Ceratioidei	30
75	Notoscopelus resplendens	29
76	Chilara taylori	28
76	Halichoeres spp.	28
78	Poromitra spp.	27
79	Scomber japonicus	24
79	Scorpaenichthys marmoratus	24
81	Trichiuridae	23
81	Lampadena urophaos	23
83	Xystreurys liolepis	22
84	Oxylebius pictus	20
85	Zaniolepis spp.	19
85	Prionotus spp.	19
85	Lampanyctus regalis	19
88	Notolepis risso	18
89	Scopelogadus bispinosus	17
89	Cyclopteridae	17
91	Brosmophycis marginata	16
92	Glyptocephalus zachirus	15
92	Sphyraena argentea	15
92	Pleuronichthys coenosus	15
95	Psettichthys melanostictus	14
95	Macrouridae	14
97	Anguilliformes	13
97	Hygophum spp.	13
51	nggopnom spp.	1.0

TABLE 2. (cont.)

Rank	Taxon	Occurrences
99	Medialuna californiensis	12
99		12
99	Scorpaena spp.	12
	Brama spp.	11
102	Macroramphosus gracilis	
102	Loweina rara	11
102	Pleuronichthys decurrens	11
102	Aristostomias scintillans	11
106	Hygophum reinhardtii	10
106	Syngnathus spp.	10
106	Notolychnus valdiviae	10
109	Protomyctophum thompsoni	9
109	Etrumeus acuminatus	9
109	Seriola lalandi	9
109	Agonidae	9
113	Semicossyphus pulcher	8 7
114	Diplophos taenia	7
114	Electrona rissoi	7
114	Pleuronectiformes	7
114	Pleuronichthys ritteri	7
114	Girella nigricans	7
119	Paralepididae	6
119	Hypsopsetta guttulata	6
119	Hexagrammidae	6
122	Eutaeniophoridae	5
122	Atherinidae	5
122	Exocoetidae	5
125	Haemulidae	4
125	Tactostoma macropus	4
125	Blennioidei	4
125	Howella brodiei	4
125	Stomiiformes	4
125	Gerreidae	4
131	Carangidae	3
132	Centrobranchus spp.	2
132	Physiculus spp.	2
132	Scombridae	2
132	Auxis spp.	2
132	Caulolatilus princeps	2
132	Porichthys spp.	2
132	Scopeloberyx robustus	2
132	Bathophilus spp.	2
140	Osmeridae	1
140	Gobiesocidae	1
140	Gempylidae	1
140	Stemonosudis macrura	1
140	Pleuronichthys spp.	1
140	Astronesthidae	1
140	Vinciguerria poweriae	1
140	Parvilux ingens	1
140	Ophiodon elongatus	1

TABLE 2. (cont.)

Rank	Taxon	Occurrences
140	Nomeidae	1
140	Coryphaena hippurus	1
140	Dolichopteryx spp.	1
140	Icosteus aenigmaticus	1
140	Lepidopsetta bilineata	1

TABLE 3. Pooled numbers of fish larvae taken during CalCOFI cruises in 1969. Counts are adjusted for percent of sample sorted and standard haul factor (see text).

Rank	Taxon	Count
1	Engraulis mordax	468352
2	Sebastes spp.	86545
3	Leuroglossus stilbius	55312
4	Vinciguerria lucetia	49462
5	Merluccius productus	47105
6	Triphoturus mexicanus	22844
7	Stenobrachius leucopsarus	20698
8	Sciaenidae	13413
9	Citharichthys spp.	10217
10	Trachurus symmetricus	7718
11	Bathylagus ochotensis	6639
12	Bathylagus wesethi	6212
13	Protomyctophum crockeri	5564
14	Cyclothone spp.	4509
15	Unidentified fish larva	4448
16	Lampanyctus spp.	4200
17	Bathylagus spp.	3777
18	Disintegrated fish larva	3757
19	Diogenichthys laternatus	3685
20	Sardinops sagax	3093
21	Sternoptychidae	2982
22	Tarletonbeania crenularis	2801
23	Myctophidae	2778
24	Citharichthys stigmaeus	2485
25	Synodus spp.	2120
26	Melamphaes spp.	1775
27	Diaphus spp.	1758
28	Diogenichthys atlanticus	1646
29	Ceratoscopelus townsendi	1623
30	Lampanyctus ritteri	1585
31	Argentina sialis	1457
32	Stomias atriventer	1448
33	Parophrys vetulus	1435
34	Icichthys lockingtoni	1315
35	Lestidiops ringens	1234
36	Symbolophorus californiensis	918
37	Chauliodus macouni	900
38	Sarda chiliensis	874
39	Chromis punctipinnis	789
40	Oxyjulis californica	762
41	Gobiidae	748
42	Serranidae	692
43	Idiacanthus antrostomus	643
44		532
45	Hygophum atratum Gonostomatidae	513
46	Paralichthys californicus	497
47		470
4 /	Symphurus spp.	4.70

TABLE 3. (cont.)

Rank	Taxon	Count
48	Scopelarchidae	444
49	Bathylagus pacificus	438
50	Prionotus spp.	384
51	Ophidiiformes	372
52	Hypsoblennius spp.	364
53	Peprilus simillimus	348
54	Lyopsetta exilis	347
55	Diogenichthys spp.	343
56	Scomber japonicus	322
57	Pleuronichthys verticalis	319
58	Trachipteridae	286
59	Tetragonurus cuvieri	280
60	Seriola lalandi	270
60	Gonichthys tenuiculus	270
62	Nansenia candida	267
63	Clinidae	266
64	Microstoma microstoma	261
65	Myctophum nitidulum	256
66	Hippoglossina stomata	239
67	Microstomus pacificus	236
68	Sebastolobus spp.	233
69	Ophidion scrippsae	208
70	Cottidae	200
71	Notoscopelus resplendens	183
72	Etrumeus acuminatus	182
73	Nansenia crassa	173
74	Ceratioidei	168
75	Halichoeres spp.	165
76	Chiasmodontidae	164
77	Lampadena urophaos	149
78	Xystreurys liolepis	148
78	Scopelosaurus spp.	148
80	Lampanyctus regalis	140
81	Cololabis saira	134
82	Trichiuridae	125 124
83	Ichthyococcus spp.	
84	Anguilliformes	118
85	Bathylagus milleri	102
86	Chilara taylori	102
87	Scorpaena spp.	93
88 89	Scorpaenichthys marmoratus	87
90	<i>Poromitra</i> spp. Hexagrammidae	81
91	Sphyraena argentea	77
92	Scopelogadus bispinosus	73
93	Glyptocephalus zachirus	71
94	Oxylebius pictus	69
95	Notolepis risso	64
95	Zaniolepis spp.	64
	aunioichia abb.	04

TABLE 3. (cont.)

Rank	Taxon	Count
97	Blennioidei	62
98	Psettichthys melanostictus	61
99	Pleuronichthys coenosus	57
100	Brosmophycis marginata	55
101	Pleuronectiformes	52
101	Paralepididae	52
103	Macrouridae	49
103	Macroramphosus gracilis	49
103	Cyclopteridae	49
103	Medialuna californiensis	49
107	Hygophum reinhardtii	48
108	Girella nigricans	47
109	Loweina rara	45
109	Brama spp.	45
111	Protomyctophum thompsoni	44
112	Hygophum spp.	41
112	Notolychnus valdiviae	41
112	Pleuronichthys ritteri	41
112	Aristostomias scintillans	41
116	Pleuronichthys decurrens	38
117	Semicossyphus pulcher	36
118	Exocoetidae	35
119	Syngnathus spp.	34
119	Gerreidae	34
121	Hypsopsetta guttulata	32
122	Diplophos taenia	28 27
123	Agonidae	25
124	Atherinidae	22
125	Electrona rissoi	21
126 126	Lepidopsetta bilineata Howella brodiei	21
128	Haemulidae	20
129	Stomiiformes	16
130	Eutaeniophoridae	15
131	Tactostoma macropus	14
132	Carangidae	11
133	Bathophilus spp.	9
134	Centrobranchus spp.	7
135	Auxis spp.	6
135	Physiculus spp.	6
135	Scombridae	6
135	Scopeloberyx robustus	. 6
139	Caulolatilus princeps	5
140	Porichthys spp.	4
140	Parvilux ingens	
142	Coryphaena hippurus	3
142	Nomeidae	3
142	Pleuronichthys spp.	4 3 3 3 3
142	Vinciguerria poweriae	3

TABLE 3. (cont.)

Rank	Taxon	Count
142 142 142 142 142 142 142 142	Osmeridae Ophiodon elongatus Astronesthidae Icosteus aenigmaticus Dolichopteryx spp. Gempylidae Gobiesocidae Stemonosudis macrura	3 3 3 3 3 3 3
	Total	875854

Numbers of fish larvae taken on stations occupied during CalCOFI cruises in 1969. Counts are adjusted for percent of sample sorted and standard haul factor (see text). Average number is given for stations occupied twice during a single month. Unoccupied stations are indicated by a dash. TABLE 4.

	DEC.	0000000000	DEC.	0.0 0.0 0.0 0.0 0.0 0.0	000000000000000000000000000000000000000
	NOV.	000000	NOV.	0.0 0.0 0.0 0.0 0.0 0.0 0.0	
	OCT.	79.6 0.0 0.0 0.0 0.0 0.0 3.3 5.5	OCT.	18.1 15.9 0.0 42.3 3.0 50.0 22.2	000000000000000000000000000000000000000
:	SEP.	00000	SEP.	0.0 	000000000000000000000000000000000000000
	AUG.		AUG.		
rn.	JULY	000000000000000000000000000000000000000	JULY	17.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 27.5 3.1 0.0 0.0 0.0 0.0 0.0 0.0
Anguilliformes	JUNE	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	JUNE	0.0 0.0 11.4 0.0 0.0 0.0 0.0 0.0	4.0000000000000000000000000000000000000
Anguil]	MAY	Etrumeus a	MAY	Sardinops	0.00
7	APR.	0.00 0.00 0.00 0.00 0.00 0.00	APR.	2.1 0.0 0.0 0.0 0.0 0.0 0.0	000000000000000000000000000000000000000
	MAR.	11111100000	MAR.	0.0 0.0 0.0 0.0 0.0 0.0	
	FEB.	00000	FEB.	FEB.	100 100 100 100 100 100 100 100 100 100
	JAN.	0.0000000000000000000000000000000000000	JAN.	0.0 	
		32.0 22.0 33.0 33.0 33.0 33.0 33.0		40.0 28.0 35.0 22.0 22.0 22.0	28 28 28 28 28 28 28 28 28 28 28 28 28 2
	STATION	90.0 1 100.0 1 110.0 1 117.0 1 130.0 1 133.0 1 137.0 1	STATION	120.0 130.0 130.0 133.0 133.0 137.0	87.0 87.0 87.0 90.0 90.0 97.0 97.0 100.0 100.0

TABLE 4. (cont.)

	DEC.	00000000000000000000000000000000000000
	NOV.	NOV
) 	OCT.	250.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0
	SEP	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1308.2 351.0 11.3 11.3 SEP.
	AUG.	AUG. 00.00 0.00 0.00 0.00 0.00 0.00 0.00
cont.)	JULY	AX 33.200000000000000000000000000000000000
)	JUNE	121.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0
Sardinops sagax	MAY	Engraul. MAY MAY 0.0 0.0 0.0 0.0
Sard	APR.	APR.
	MAR.	MAR
	FEB.	118.3 11
	JAN.	22.7 0.00
		N N N N N N N N N N N N N N N N N N N
	STATION	103.0 107.0 107.0 1107.0 1110.0 1110.0 1113.0 1113.0 1117.0 110.0 110.0 110.0 110.0 110.0 110.0 110.0 110.0 110.0 110.0 1

DEC. NOV 0.00 OCT. SEP 11.22 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2.24 | 2 AUG (cont.) JULY Engraulis mordax JUNE 13617-22 00:00 00: MAR 9000 913.0 913.0 913.0 913.0 913.0 913.0 913.0 913.0 910.0 9 FEB. STATION 663.0 663.0 663.0 663.0 663.0 770.0 777.0 777.0 777.0 777.0 777.0 777.0 777.0 777.0 880.0 883.0 883.0

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mordax	JUNE	20.8 329.4 329.4 329.4 329.4 123.3 13.3 13.3 13.3 10.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	
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	JAN.	000000010700000000000000000000000000000	
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	DEC.	2000 2100 2100 2210
	NOV.	30.00 30.00 31.11 21
	OCT.	162.4 80.0 80.0 20.0 0.0 20.0 20.0 13.0 14.0 14.0
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(cont.)	JULY	182 1 182 1 182 1 182 1 182 1 182 1 1 1 1
mordax	JUNE	10.0 10.0
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	MAR.	106:1
	FEB.	387.6 387.6 453.5 663.5 63
	JAN.	222 200 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	Z	0.007228884488886888844888888888888888888888
	STATION	1133.0 1133.0 1133.0 1133.0 1133.0 1133.0 1133.0 1133.0 1133.0 1133.0 1133.0 1133.0 1133.0 1133.0

TABLE 4. (cont.)

	DEC.	033.7 22.9 22.9 22.9 111.7	DEC.	000000000000000000000000000000000000000
	MOV.	33 33 3	TOV.	000000000000000000000000000000000000000
	OCT.	14000 # 10 10 10 10 10 10 10 10 10 10 10 10 10	OCT.	
	SEP.	1111111111	SEP.	000000000000000000000000000000000000000
	AUG.	1 1 1 1 1 1 1 1 1 1 1 1	AUG.	momocooooo
cont.)	JULY	2.5 0.00 0 4.00 0.00 0.00 0.00 0.00 0.00 0.	JULY	00000000000000000000000000000000000000
mordax (JUNE	20.0 0.0 0.0 0.0 20.0 2.7 2.7 2.7 2.3 2.7 2.8 2.0 0.0 0.0	JUNE	220000000000000000000000000000000000000
Ŋ	MAY	nti	PSTAY	00000000000000000000000000000000000000
Engrauli	APR.	100 100 120 100 100 100 100 100 100 100	APR.	1 1 1 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	MAR.	2137 369.55 23.77 249.66 239.46 23.06 23.06	MAR.	
	FEB.	3 1 1 1 1 1 1 1 1 1 1 1	FEB.	70000000000000000000000000000000000000
	JAN.		JAN.	00000000000000000000000000000000000000
		30.00 60.00 722.00 722.00 723.00 740.00 60.00	2	2222.00 231.00 231.00 231.00 231.00 231.00 231.00 231.00 231.00
	STATION	133.0 133.0 133.0 133.0 137.0 137.0	STATION	60.00 63.00 63.00 63.00 80.00 80.00 83.00 83.00 83.00 90.00 90.00 90.00 100.00 100.00 100.00

TABLE 4. (cont.)

	DEC.	300000000000000000000000000000000000000	DEC.	
	NOV.	00 00000	NOV.	
	OCT.	11.000000000000000000000000000000000000	OCT.	0.0000000000000000000000000000000000000
	SEP.	17.50 0.00 0.00 0.00 0.00 0.00 0.00 0.00	SEP.	11111111111111110
	AUG.		AUG.	000000000000000000000000000000000000000
cont.)	JULY	24.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	JULY	000000000000000000000000000000000000000
alis (JUNE	0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.0 16.7 15.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	JUNE	
Si	MAY	crostoma	MAY	
Argentina	APR.	0.0 0.0 0.0 3.0 0.0 0.0 0.0 0.0 0.0 0.0	APR.	4000000
	MAR.	10.8 3.3 3.3	MAR.	
	FEB.	247 240 247 247 260 200 200 200 200 200 200 200 200 200	FEB.	000000000000000000000000000000000000000
	JAN.	4 4 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	JAN.	
	ON	4	ON	600 600 600 600 600 600 600 600 600 600
	STATION	1100.0 1100.0 11100.0 1113.0 1113.0 1113.0 1117.0 1117.0 1117.0 1118.0 1120.0 1133.0	STATI	60.0 60.0 63.0 63.0 67.0 73.0 77.0 77.0 77.0 80.0 80.0 83.0

TABLE 4. (cont.)

	DEC.		DEC.	1111111111
	NOV.	0001111111111111111111111111	NOV.	00000
	OCT.		OCT.	0.0000
	SEP.	02000 WWO 00 WZWWW000000000000000000000000000	SEP.	1111111111
(• :	AUG.		AUG.	00000
(cont.	JULY	33.00000000000000000000000000000000000	JULY	00000
rostoma	JUNE	candida	JUNE	1111111111
Microstoma microstoma	MAX	Nansenia	MAY	22.5 22.5 12.9 3.4
icrost	APR.		APR.	1 1 1 1 1 1 1 1 1 1 1
¥	MAR.	0.0	MAR.	111111111
	FEB.	00000 00000 00 000000000000000000000000	FEB.	1111120000
	JAN.	00000000000000000000000000000000000000	JAN.	24 2 2 4 2 4 2 4 2 4 2 4 2 4 2 4 2 4 2
	Z	70.0 80.0 70.0 70.0 70.0 70.0 70.0 70.0	Z	100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0
	STATION	217.00	STATION	40.0 40.0 443.0 63.0 63.0 67.0 70.0

TABLE 4. (cont.)

	DEC.	0.0	000000000000000000000000000000000000000
	NOV.	0000000011111	000000000000000000000000000000000000000
	oct.	000000000000000000000000000000000000000	
	SEP.	0.0 0.0 0.0 0.0	
	AUG.	0.0000000000000000000000000000000000000	
cont.)	JULY	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	000000000000000000000000000000000000000
candida (JUNE	a crass	
	MAY	56.7 52.2 0.0 14.3 13.3 3.1 3.4 0.0 0.0 0.0 0.0	
Nansenia	APR.		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0
	MAR.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	10.5 10.5 10.0 10.0 10.0 10.0 10.0 10.0
	FEB.	0.000000000000000000000000000000000000	
	JAN.		
		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	% % % % % % % % % % % % % % % % % % %
	STATION	7.00.00.00.00.00.00.00.00.00.00.00.00.00	103.0 107.0 110.0

TABLE 4. (cont.)

Bathylagus spp. MAY JUNE JULY AUG. SEP. OCT. NOV. DEC. D.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	FEB.
JULY AUG. SEP. OCT. O.0	.4 0.
JULY AUG. SEP. OCT. NOV. OCT. NOV. OCT. OCT. OCT. OCT. OCT. OCT. OCT. OCT	9
AUG. SEP. OCT. NOV. 1	0.0
JUNE JULY AUG. SEP. OCT. NOV.	B
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	DEC.	0000
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	OCT.	
	SEP.	0000000
	AUG.	0 0000000000000000000000000000000000000
ont.)	יחב	000000000000000000000000000000000000000
Bathylagus spp. (cont.	JUNE	
ylagus	MAY	
Bath	APR.	2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
	MAR.	
	FEB.	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
	JAN.	29 1 1 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
		80000000000000000000000000000000000000
	STATION	67.0 67.0 67.0 67.0 70.0 70.0 70.0 70.0

	DEC.	8500000 770m00000000000000000000000000000
	NOV.	0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	ocr.	
	SEP.	
	AUG.	
(cont.)	JULY	000000000000000000000000000000000000000
spp. (c	JUNE	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Bathylagus	MAY	
Bath	APR.	000000uwowood4wwwood0wwwwad000uwwwoo000000000000000000000000000000
	MAR.	0.
١	FEB.	1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	JAN.	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
	2	0.00 0.00
	STATION	990000 9900000 990000 990000 990000 990000 990000 990000 990000 9900000 990000 990000 990000 990000 990000 990000 990000 9900000 990

TABLE 4. (cont.)

	DEC.	0000000000	DEC.	ı	ı	ı	I	i	1	ı	1	ı	ı	1	i	i	1	1	1 1		l	1 1		i	I	ŧ.	1	i	i	1	1 0	
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	OCT.	00000111100	OCT.	1	ŀ	t	1	í	ı	ı	ı				ກຸດ		0		0	0		0	0			0	0	0		0	0.0	0
	SEP.	00000000011	SEP.	1	1	ı	ı	ŀ	ŀ	ı	ı	ı	ı	ı	ı	ŀ	l	ı	ı	ł	i	ĺ	ł	I	ì	I	I	i	I	ques	ı	I
	AUG.	111111111	AUG.	ı	ŧ	i	ı	ŧ	i	ŀ	ı				0.0			0					0		0	0		0	0.0	0		i
(cont.)	JULY	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	JULY	ı	1	i	١	ı	ŝ	í	1	1			0.0	9			0	0			0		0			0	0	- 6	0.0	0
spp. (c	JUNE	0.0 0.0 3.1 0.0 0.0 3.3 3.1 3.6 0.0 0.0	JUNE	ı	1	1	1	ı	1	i	ı	i	ı	1	1	i	ı	ı	1	ı	ı	1	í	ı	ł	ı	1	l	ı	i	ı	I
Bathylagus	MAY	- - - - - - Bathylagus	MAY	ı	1	ı	ı	1	1	ı	ı	1	0.0		0.0		- 6				0	0			- 0			- 0		0	0.0	0
Bath	APR.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	APR.		ı	1	ı	i	ı	ı	ł	ı	ı	ι	ı	1	ſ	i	ı	ı	ł	l	ı	ī	ı	1	ı	j	í		0.0	
	MAR.	0.0000000000000000000000000000000000000	MAR.		1	1	1	ı	ı	ı	ı	ı	ı	ı	1	1	ı	ı	ı	1	ı	ı	1	ı	1	ı	ı	1	1	1	1	I
	FEB.	000000111111	FEB.		1	ŀ																0	0	0		. 0	0			- 0	0.0	
	JAN.	0.0000000000000000000000000000000000000	JAN.	1 4	2.9			1	1	1	ı	1			3,3							0	0			0					3.2	0
	7	25.0 25.0 39.0 45.0 50.0 37.0	7			90	2	0	0.	0.	0	0	0	5	0	0.	0.	5	0	0	0	0	5.	5.	0.	0	3	0.	5	0	0.06	5
	STATION	113.0 113.0 113.0 113.0 113.0 120.0 120.0 123.0 133.0	STATION	1	0.0	7.0	0	0	0	0.0	3	7.	0	8	3	3	7.	2	1.	7	7.	0	0	0.	0.	0.	33	3	3	7.	83.0	e,

TABLE 4. (cont.)

					Bati	nylagus	Bathylagus ochotensis	nsis					
STATION		JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
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1	DEC.	ı	ι	i	ı	l	I	ı	ı	ı	ı	ı	ı	1	ı	1	ı	1	1	ı	ı	ı	1	1	ı	I	ı	1	1 1	1	ŀ	1	ı	ı	ı	ı	ı	ı	ı	ı	1 :	i	1 1)	1	
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	OCT.		0.0					8					- 4					1						0.0									0.0										0			
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-	AUG.	1	3.5															ı		0.0																								0.0		
(cont.	JULY	1	0.0													0.0		ı						0.0									6.2	•		0.0								0.0	0	
tensis	JUNE	ı	ı	ı	ı	1	ı	ı	ı	ı	1	ı	١	ı	ı	ı	ı	ı	í	ı	ı	ι	f	ŀ	ı	ı	1	ļ	i	ı	I 1	۱ (1	ı	ı	1	1	ı	ı	1	ŀ	ł	1	ı	1
us och	MAY	ı	0.0									- 0				0.0		ı	0.0					0.0									20.00											0.0		
Bathylagus ochotensis	APR.		ı	t	ı	1	ı	ı	ı	ı	1	ı	ı	ı	ı	ı	ı	1	ı	1	ı	ı	ı	ı	1	ı	ì	1	ı	ı	ı	1	1 1	1	ı	t	ı	1	ı	1	ı	ı	ı	ł	ı	ı
В	MAR.	1	ı	ı	1	ı	ı	1	ı	ı	1	1	1	1	1	1	1	1	1	1	ı	ı	ı	ł	ı	ı	ı	ı	l	1	l	ı	ı }	1	ı	ı	1	1	ı	t	ı	ł	1	ı	i	ı
	FEB.		0.	0		ů.	0	œ	0	2.		2.	0	2	, ~	, m		, ~	1		-	8	0.		4	0	0	0	φ,	4		0 u	υ α α	0 6	4		9.	- 0	Ϊ,		2.					6
	JAN.		0	4.		7.	7.	3.	9	0	0	8			ō			1		<u>ا</u>	8	2	7.	32.6	3		0	12.	5	m ı		1 <	20.02	0		3	5	0.		8	5.			8 9 9		
	Z	16	52.	ů.	0	5	0	0	0	2	5	0	2						AR		2	0	5	0	0	0	Ξ.	m	0	ഗ്		ຄໍເ	0.00	ċ	0	3	0	v.	0.	o.	0	0	œ	i	د	o.
	STATION	7.0	0.0	0	0	0	0	0	0	æ	3	3		. ~	, ~	. ~		90	0		7	7	7	7.	7.	7.	0	0	0	0	30		20.07		300	3	3	ä	Э,	33	m.		7	7.	۲.	

	DEC.	00000 000000000000000000000000000000000
	NOV.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
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•	AUG.	0000 0000 00000000000000000000000000000
(cont.	JULY	
otensis	JUNE	
gus och	MAY	4 m m o o o o o o o o o o o o o o o o o
Bathylagus ochotensis	APR.	1 10 1 1 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1
F	MAR.	10.00
	FEB.	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
	JAN.	11111111111111111111111111111111111111
	N	255.0 26
	STATION	77777777777777777777777777777777777777

TABLE 4. (cont.)

	DEC.		DEC.	+111111111
	NOV.		NOV.	111111111
	ocT.		OCT.	11111111
	SEP.		SEP.	11111111
•	AUG.		AUG.	
(cont.	JULY		JULY	111111111
Bathylagus ochotensis	JUNE		JUNE	
gus och	MAY	22 10.0 0 0.0 0 0.0 3 0.0 6 10.8 8 3.2 9 0.0 1	MAY	1 1 1 1 1 1 1 1 1 1
athyla	APR.	Bat	APR.	111111111
B	MAR.	6.	MAR.	
	FEB.	0 m q q q q q m q q q m m q q q q m m q q q q m m q q q q m m q q q q m m q q q q m m q q q q m m q q q q q m m q q q q q q q m m q	FEB.	111122 6.22 5.22 5.22
	JAN.	0 m 0 0 0 0 0 0 m 0 0 0 0 0 0 0 0 0 0 0	JAN.	888888111111 887.1.0
	72	35.0 45.0 120.	NO	50.0 45.0 50.0 100.0 90.0 47.0 55.0 60.0
	STATION	933.0 933.0 933.0 933.0 933.0 933.0 937.0 937.0 1000.0 1000.0 1000.0 1003.0 1003.0	STATIO	0.0000000000000000000000000000000000000

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	DEC.	1	ı	1	1	1	i	1	I	I	1	1	i	1	ı	l	1	ı	1	1	ı	I	1	1	1 1	1	1	1	1 1		1	ı	ı	ı	1 1	ı	1	ı		0.0		0
	NOV.	1	ı	1	ı							0.0						•					4																	ı	1 1	
	OCT.	i	ı	į	1	ı						0.0											0.0										0.0							0.0		
	SEP.	1	1	ı	t	ŧ	1	ı	1	1	ı	ı	ı	ı	ı	l .	1		ı	1	ı	I	L	ı	l 1	ı	I	1	l i	1 4	ı	1	1	I	1 1	1	1 1	ı		0.0		
t.)	AUG.	1	ı	1	ı	1										0.0												٠		٠	0 0			٠		4				ı	i	ı
s (cont.	JULY	1	ı	i	1	ı			- 0									0	0				0.0											0				0 0		0.0		
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	MAY	1 	ı	ı	١	ı						0.0						0		0 (•										0.0		
Bathylagus	APR.		ı	ı	1	ı	1	1	i	ł	1	1	ı	1	1	I	ł	ı		ı	1	ı	ı	1	1 1	ı	1	1	ı	dages	1 1	1								0.0	0	
	MAR.	1 1	1	1	1	ı	ı	ı	ı	ı	i	1	1	t	ı	I	1	1	1 1	ı	ı	1	1	i	1 1	ı	ł	1	I	Li		ł	ı	ı	I	I	1 (1	1	0.0		3.5
	FEB.	1			0 (0					o to		, ,			7.	15.0	9 6				0							0			3.2		0
	JAN.		1	I	ı	ı																									0									0.0		
	NO	60	70.	000	60.	70.	60	65.	70.	80	90	50.	55.	.09	65.	70.	100.	200	000	70.	200	60.	65.	70.	75.	53.	60.	65.	80.	51.	600	70.	80.	60.	65.	10.	55.	70.	45.	45.0	53.	90.
	STATION	10			, ,	7	0	0	0	0	0	3	3	3.	3.	٠ ش	m 1	:	:			0	0	0	00	. ~	300	3.	٠ س	-		7	7.	0	0	0		, ~	7	90.0	0	0

TABLE 4. (cont.)

	DEC.	00000	DEC.	28.7
	NOV.	11111	NOV.	000000000000000000000000000000000000000
	OCT.	000000	OCT.	32000000000000000000000000000000000000
	SEP.	00000	SEP.	16.9 17.22 24.2 24.2 20.0 00.0 13.3.1
·	AUG.	11111	AUG.	000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
(cont.)	JULY	000440	thi	244.00.00.00.00.00.00.00.00.00.00.00.00.0
pacificus	JUNE		is weseth	
igus pac	MAY	11111	Bathylagus MAY	0.000000000000000000000000000000000000
Bathylagus	APR.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Be Be APR.	133.5 133.5 133.5 133.7 133.7 100.0
	MAR.	11111	MAR.	0.
	FEB.	3.1	FEB.	
	Z.	000000	AN.	000011000000000000000000000000000000000
	JAN	000000 -	1,0	
	STATION	50.0 80.0 45.0 70.0 80.0 35.0	L NO	\$555.0 \$600.0 \$6

	DEC.	
	NOV.	
	OCT.	000 00 00 00 00 00 00 00 00 00 00 00 00
	SEP.	10.00 10
	AUG.	
(cont.)	JULY	232222 232222 2000 20
wesethi	JUNE	131.35 142.00 152.00 173.00 181.00
	MAY	000mmmm0
Bathylagus	APR.	10000000000000000000000000000000000000
	MAR.	
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TABLE 4. (cont.)

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TABLE 4. (cont.)

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	FEB.	000000000111111	FEB.			0.0		. 0		0	0 1	0 0			0		0 (0 0	0	0.0	0
	JAN.	m000m0m00011111	JAN.				0				1			0.0	0	0	-					0 0		0.0	0
	7	80.0 80.0 70.0 70.0 70.0 70.0 60.0 60.0	Z	0.	0		0	0	3	90.		60.	5.	0.			70.	0	0.	5			0.	90.0	1
	STATION	113.00 113.00 113.00 113.00 113.00 117.00 11	STATION	3.0	0.	7.	7	7	0	0.0		0.0	3	3	7 0	0.0	7.0	7.	7.	0		0	m	83.0	

	DEC.	1 1		0	0 (0.0		0		ı	İ								ı						0				0		6.						0 (0.0		•	
	NOV.	0.0		1 -	1 1	1	ł	ı	ı	ı	1	i	ı		i	ı	ì	ı	ı	ı	ı	ı	1 1	i	1	ì	ì	1 1	۱ ۱	1	ı	ı	i	I	ı	ì	1 1	1	ı	ı	ı	
	OCT.	0.0						3		0	. 7	-,					9		2	7.	8	· ·	0	0 0						9		6.	0						0 4			
	SEP.	0.0								ı	ı								ŀ								0		÷-	- 60	7	3.		- 0	0		٠ د	• О Ц	16.5	0		
	AUG.	1 1	1	ł	1 1	1	ı	1	1	ı	1	ı	ı	ı		1	1	1	1	ı	١	ı	H	1	ı	1	ı	I	l I	1 1	ı	ı	ı	ı	I	1	1	I 1	1	ı	i	
(cont.)	JULY	3.6							5.		2.					0	, –		5	5.					0 0						0 (
spp. (c	JUNE	1 1	1	f	l I	1	1	1	1	ı	ı	ı	ı	ı	ı	1	ł	1	i	i	- 6							6			٠.		0						22.1	0		
Cyclothone	MAY	0.0				0 0					ı		0.0		0	0		0	!	1	1	ı	į	i i	i	ı	ı	ı	ı	1 1	ı	ı	1	ı	ı	ı	ſ	ı	1 1	ı	ı	
Cyclc	APR.	3.0							3										8		0				ى د					0	4	0 4							7.9	0 1		
	MAR.		1	ı	ı	0		ı	1	1	ı	ı	1	ı	ı	1	1	ŀ	1	į	1	ļ	ł	1 (l I	ŀ	ı	ı	ı	1 (ı	ı	1	ı	ı	i	ı	1 1	1	ı	
	FEB.	0.00									i								i	ŀ		0.0	ı									m				4.			0.0	0		
	JAN.	0.0									9															0 0					0	0 0	0 0						0°0	0		
		70.0		æ	21	. c			0	00	20.	40.	35.	0	0			000		40.	40.	0	0	· .	•	7 ر . •	0	0	5.	0			 N	0	5	0	ů.	0		, ,	i Ci	
	STATION	0	0 - 2	0.0	0.0				0.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	ى 0 د	200		3.0	7.00	7.0	7.0	0.7	0.76	0.00	0.00	0.00	0.00	00.00	0.00	000	03.0	03.0	03.0	03.0	03.0	03.0	000	0.20	0.70	

DEC.	
NOV.	32.66 0.00 0.00 0.00 0.00 0.00 0.00 0.00
OCT.	2 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
SEP.	222 4 4 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
AUG.	
JULY	46000000000000000000000000000000000000
JUNE	1 1 2 2 4 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
R. MAY	
APR.	121 12 12 12 2 1 122 2 1 1 2 1 2 2 2 2
MAR.	000000000000000000000000000000000000000
FEB.	222 2011 2012 2010 2010 2010 2010 2010
JAN.	00000000000000000000000000000000000000
ON	44000000000000000000000000000000000000
STATIC	107.0 107.0

TABLE 4. (cont.)

	DEC.	00011	 	DEC.	0001101	1	DEC.	0.0000000000000000000000000000000000000
	NOV.	0.00 KB		NOV.	0.0 0.0 0.0 32.9		NOV.	0.00000
	OCT.	0.00		OCT.	0.0000000000000000000000000000000000000		ocT.	000000000000000011111
	SEP.	1 1 1 1 1		SEP.	3.1		SEP.	000000000000000000000000000000000000000
	AUG.	11111		AUG.	111111		AUG.	
(cont.)	JULY	3.5 0.0 7.2 3.2 16.0	ia	JULY	0.00	spp.	JULY	000000000000000000000000000000000000000
spp. (c	JUNE	6.4 0.0 0.0	s taenia	JUNE	0000000		JUNE	
Cyclothone	MAY	1 1 1 1 1	Diplophos	MAY	111111	Ichthyococcus	MAY	0
Cycl	APR.	00000	D	APR.	000000	Ic	APR.	000000000000000000000000000000000000000
	MAR.	3000 m m		MAR.	000000		MAR.	90.00
	FEB.	1111		FEB.	111111		FEB.	#0#0#00000#0#0000000000000000000000000
	JAN.	1 1 1		JAN.	11111		JAN.	000000000000000000000000000000000000000
		60.0 40.0 60.0 60.0			900.0 600.0 600.0 550.0 40.0			2330 660 660 660 660 660 660 660
	STATION	133.0 133.0 133.0 133.0		STATION	120.0 123.0 127.0 130.0 133.0 137.0		STATION	93.0 100.0 100.0 1003.0 103.0 107.0 107.0 110.0 1113.0 117.0 117.0

TABLE 4. (cont.)

	DEC.	0.00011	DEC.	370.00000000000000000000000000000000000
	NOV.	00000	NOV.	0000100001111111111111111111111111
	OCT.	0000	OCT.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 134.0 134.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
	SEP.	0.000111	SEP.	1114.2 114.2 114.2 114.2 114.2 114.2 114.2 114.2 11
	AUG.	1 1 1 1 1	AUG.	0000
(cont.)	JULY	0.0000000000000000000000000000000000000	JULY	17.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0
s spp.	JUNE	00000m	ia lucet	111111111111111111111111111111111111111
Ichthyococcus	MAY	11111	Vinciguerr . MAY	0.0000000000000000000000000000000000000
Ichth	APR.	000000	Vir APR.	28 8 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9
	MAR.	000000	MAR.	0
	FEB.	11111	FEB.	000000000000000000000000000000000000000
	JAN.	11111	JAN.	22222222222222222222222222222222222222
	STATION	120.0 80.0 123.0 45.0 127.0 60.0 130.0 50.0	STATION	73.0 90.0 83.0 90.0 883.0 80.0 887.0 60.0 887.0 60.0 887.0 90.0 90.0 90.0 90.0 90.0 90.0 90.0 9

	DEC.	244470000000000000000000000000000000000	
	NOV.		
 	OCT.	257.55	
	SEP.	230 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
•	AUG.		
(cont.	JULY	282 000 000 000 000 000 000 000 000 2245 000 000 200 200 200 000 000 000 000 00)
lucetia	JUNE	223 22 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
	MAY		
Vinciguerria	APR.	29.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 1.50.4 1.30.4 0.00 0	
	MAR.	; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;	
	FEB.	280.00 100.00 69.49 13.00 100.00 100.00 100.00 100.00 18.6 120.5 280.5 280.5 120.5 120.5 120.5 10.0 10.0 10.0 10.0 10.0 10.0 10.0 1	4
	JAN.	144.6 26.2 26.2 10.0 0.0 0.0 0.0 11.9 11	•
	NO	980 900 900 900 900 900 900 900	ò
	STATIO	97.0 1000.0 1000.0 1000.0 1000.0 1000.0 1003.0 1007.0 1100.0 1113.0 1113.0	. / 1

	DEC.	184.00 00.00 186.00 00.00
	NOV.	19.9 19.9 18.3.5 18.3.5 11.58.4 11.58.4 11.58.4 11.1 12.0 13.0 13.0 13.0 13.0 12.0 13.0 12.0 13.0 12.0 13.0 12.0 13.0
	OCT.	130.3 130.3
	SEP.	10.9 170.1 170.1 170.1 186.1 186.1 186.1 186.1 186.1 196.0 190.0 1
•	AUG.	
(cont.	JULY	3928 334 4 6 6 7 1 1 2 6 7 1 1 2 6 7 1
lucetia	JUNE	7882 3 3 3 3 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5
	MAY	
Vinciguerria	APR.	1633 2 1 2 6 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	MAR.	192 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	FEB.	000 W 24 G O O I I I I I I I I I I I I I I I I I
	JAN.	0.00 41.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
	ON	44800000000000000000000000000000000000
	STATI	100.00.00.00.00.00.00.00.00.00.00.00.00.

TABLE 4. (cont.)

					Vincig	Vinciguerria	lucetia	(cont.	·				
STATION		JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
137.0 60	0.0			72.4	2.9		0.9	275.2	ı	í	135.7	109.2	1
					Vir	ciguer	Vinciguerria poweriae	eriae					
STATION		JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
90.0 140.0	0.1	0.0			0.0			0.0	ı	i	3.3	ı	1
						Sterno	Sternoptychidae	lae		 			
STATION		JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
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		1		1	1	1	ı	ı	ı	1	1	ı	l
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6 0.7		1		ı	1	1	ı	1 (1 0	ı		1 0	\$
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3.0				ı	1	0.0	1 1			i l	9 1	0 1	i
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7.0 5				1	1	0.0	ı		0.0	ı	0.0		1 1
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0.0		4.8		ı	1		l	6		ı		0	l

	DEC.	0.000 0
	NOV.	12 1 1 1 1 1 1 1 1 1
	OCT.	
	SEP.	0.0000000000000000000000000000000000000
	AUG.	mm 000000 000000 00000000000
(cont.)	JULY	
	JUNE	
Sternoptychidae	MAY	00 1 00 00 00 00 00 00 00 00 00 00 00 00
Ster	APR.	
	MAR.	0.6.9
,	FEB.	000114200400000000000000000000000000000
	JAN.	
	ON	1200 11100 12100 1200 1000 1000 1000 10
	STATIC	77000 77000 77000 777733300 883300 88300 88300 88300 88300 88300 88300 88300 88300 88300 88300 88300 88000 80000 8

	DEC.	
	NOV.	
	OCT.	
	SEP.	00000000000000000000000000000000000000
	AUG.	
(cont.)	JULY	LWOUNDWOOOOOONWOOOOOOOOOOOOOOOOOOOOOOOOOO
	JUNE	0.0000000000000000000000000000000000000
Sternoptychidae	MAY	400
Ster	APR.	00000000000000000000000000000000000000
	MAR.	
	FEB.	0000 1 1 1 1 1 1 1 1 1
	JAN.	
	ION	00 00 00 00 00 00 00 00 00 00 00 00 00
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	JAH.	
	!	C
	STATION	1000 1000

TABLE 4. (cont.)

Sternoptychidae (cont.)

STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
30 0 05		ı	2 7		ı			8	ı		- (0.0
0.00			0	8		•	,	1				0 0
30.0 40.	Ē	ı	0			ů.	٠					,
30.0 45.	ı	i			ı		٠	İ	ı			ı
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30.0 60.	ı	1	- 0		1		0	ı	1			ı
33.0 30.	1	1	- 4		ı			ı	ł			0.0
22 0 05	1				ŀ			1	ı			0.0
			9	0	ı	0		1	ı)
33.0 20.	l	ł	٠ د د	0			٠			9		
33.0 60.	ŀ	ı			ı	0		ı	i	0		1 4
37.0 35.	ı	1	- 0		1			1	ı	- 0		0.0
37 0 40	1	1			ı		-	ı	ı	- (-	ł
27.0				0	ı	0		1	1)		í
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3/.0 60.	I	ı		'n	ı		0					
					Note:	からない。						
					ASCIO	nescuird	ש					
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
137.0 60.0	ı	ı	0 ° 0	0.0	ı	0.0	0.0	ı	F	0.0	3.0	ı
				CI	Chauliodus	us macouni	uni					
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	ocr.	NOV.	DEC.
0.0	1				,	ı	1	1	1	ı	1	1
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43.0 50.0	2.7	1	1	ı	ı	1	í	1	ı	1	1	1
3.0 55.		1	ŧ	١	ı	ı	1	1	1	i	1	ŧ
3.0 60	4	1	ı	ı	ı	ı	1	1	ı	1	ı	ł
000		1	1	ı	ı	1	1	ı	1	i	1	ı
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0.0 120.	10.6		ı	ı	i	ı	i	ı	ı	ı	ı	ı
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3.0 80.	1		1	ı	ı	ı	1	1	ı	ı	1	ł
3.0 100.	1		ı	ı	ı	i	١	Į.	i	i	ŧ	ı
7.0 55	1		ı	ı	ı	1	ı	ı	ı	ı	ł	ı
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	DEC.		
	NOV.		•
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	SEP.		
	AUG.		
cont.)	JULY	1000 1000 1000 1000 1000 1000 1000 100	0
macouni (JUNE		
	MAY	WOO 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
Chauliodus	APR.	00 00 00 00 00 00 00 00 00 00 00 00 00	0
0	MAR.		
	FEB.	00000000000000000000000000000000000000	
	JAN.	10000000000000000000000000000000000000	
		655.0 655.0 655.0 655.0 655.0 655.0 655.0 655.0 655.0 655.0 655.0 655.0 655.0 655.0 655.0)
	STATION	66666666666666666666666666666666666666)

TABLE 4. (cont.)

	DEC.	1
	NOV.	0.00 0.00 0.00 0.00 0.00
	OCT.	
	SEP.	SEP.
	AUG.	Aug. Aug. 7.5
(cont.)	JULY	tomus 10.0
couni	JUNE	
Chauliodus macouni	MAY	10000000000000000000000000000000000000
Chauli	APR.	1 diac
	MAR.	MAR.
	FEB.	
	JAN.	JAN.
	7	60.0 80.0 80.0 90.0 90.0 90.0 90.0 10
	STATION	83.0 83.0 83.0 83.0 87.0 87.0 90.0 90.0 90.0 90.0 90.0 90.0 90.0 9

	DEC.	00 00 00 00 00 00 00 00 00 00 00 00 00
	NOV.	
	OCT.	00000000000000000000000000000000000000
	SEP.	
t.)	AUG.	27.5.800000000000000000000000000000000000
s (cont.	JULY	2000 1100 1200
Idiacanthus antrostomus	JUNE	
us anti	MAY	
iacantl	APR.	
PI	MAR.	
	FEB.	40800000000000000000000000000000000000
	JAN.	
		60.0 60.0 70.0 80.0
	STATION	733.0 733.0 777.0 777.0 777.0 777.0 880.0 800.0 887.0 990.0 990.0 990.0 993.0 1000.0 1003.0 1003.0 1003.0

TABLE 4. (cont.)

	DEC.	000000000000000000000000000000000000000	DEC.	000000	DEC.	0.0	DEC.	0.0
	NOV.	0.00	NOV.	000	NOV.	1 1	NOV.	0.00
	OCT.	000400000011	ocr.	0000000011	OCT.	0.0	OCT.	0000
	SEP.	004000000000	SEP.	000000	SEP.	0.0	SEP.	3.5
t.)	AUG.	111111111	AUG.	11111111	AUG.	1 1	AUG.	0.0
s (cont.	JULY	2.8 3.2 0.0 3.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	JULY	000000000	JULY	0.0 0.0	JULY	33.4
ostomu	JUNE		JUNE		JUNE	- 0 - 0	JUNE	0.0
Idiacanthus antrostomus	MAY	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	MAY		MAY	6.2 Tactostoma	MAY	0.0
iacanth	APR.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	APR.	B	APR.	0.0 0.0 Tac	APR.	0.00
Id	MAR.	0.0	MAR.	0.0	MAR.	1 1	MAR.	1111
	FEB.	000040000000	FEB.	0000	FEB.	0.0	FEB.	0000
	JAN.	000000000000	JAN.	01 3300 2000	JAN.	0.0	JAN.	0000
	STATION	107.0 50.0 107.0 55.0 107.0 70.0 110.0 50.0 110.0 80.0 113.0 45.0 113.0 80.0 117.0 40.0 117.0 60.0	STATION	90.0 120.0 90.0 140.0 93.0 120.0 93.0 140.0 97.0 90.0 100.0 70.0 103.0 80.0 117.0 80.0	STATION	90.0 140.0	STATION	60.0 65.0 67.0 70.0 100.0 80.0 100.0 90.0

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APR.		
MAR.		1111
FEB.	11221222222222222222222222222222222222	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
JAN.		
STATION JAN.	880.0 11	

	DEC.		0
	NOV.		0
	OCT.	000000000000000000000000000000000000000	
	SEP.	22 22 20 20 20 20 20 20 20 20 20 20 20 2	0
(AUG.		
(cont.	JULY		
atriventer	JUNE		P
	MAY		i
Stomias	APR.		9
	MAR.		
	FEB.	2222 2000 2000 2000 2000 2000 2000 200	l
	JAN.	00000000000000000000000000000000000000	0
	NC	0.000000000000000000000000000000000000	
	STATION	0.000 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0	. 0.2

	DEC.		DEC.	0.0000	DEC.	1 1 1 1 1 1
	NOV		MON	011110	NON	1 1 1 1 1
	OCT.	1 1 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0	OCT.	000001	OCT.	11111
	SEP.	00000111111111111111111	SETP	000000	SEP.	11111
t.)	AUG.		AUG.		AUG.	1 1 1 1 1
r (cont.	JULY	dae	3 JULY	0.0 0.0 0.0 0.0 0.0 0.0 3.0 0.0 4.0 0.0	E JULY	11111
atriventer	JUNE	- 144.3 - 3.2 - 3.1 - 0.0 - 0.0 - 9.4 - 9.4 - 9.6 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0	JUNE		JUNE	11111
	MAY		MAY	0.0 - - Lestid	MAY	11111
Stomias	APR.	700000000000000000000000000000000000000	APR.	00000	APR.	1 1 1 1 1
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	FEB.		FEB.	14.00.00	FEB.	11111
	JAN.		JAN.	00000	JAN.	
	NO	0.000 0.000	ON	880.0 80.0 80.0 80.0	ON	80.0 80.0 100.0
	STATI	1230.0 1233.0 1233.0 127.0 127.0 1330.0 1330.0 1331.0 1331.0 1331.0	STATION	87.0 103.0 107.0 107.0 110.0	STATION	40.004

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	NOV.	1	1	F	ı	ı	i	1	ı	1	ı	ı	ı	1	1	1	1	1	1	1					0	0.0	0					0.0					0									•
	OCT.	1	ı	ı	t	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı							000				•		0.0				0				ı		0		0	000	
	SEP.	-	ı	i	ı	ı	i	ı	i	ı	ı	ı	ı	i	1	ı	ι	i	1	ı	1	ı	ı	ı	ı	ll)	1	ı	ı	ı	ŀ	ı	ı	t	ı	ı	ı	1	ı	ı	ı	ı	i	()	
	AUG.	ŀ	1	ı	1	ı	ı	ı	ı	ı	1	ı	ı	1	1	1	ı	ı	ı	ı						0.0																		φ. (13.0	•
(cont.)	JULY		ı	i	ı	ł	ł	į	ı	1	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı						0.0	в		0	9		0.0								ı					0.0	
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	FEB.		1	1	1	1	1	1	1	1			5.		. 0					0						0																			000	B.
	JAN.		3.1			2.		9		5				1	1	ı	1	1	1	1						m c	0				-	3.5						2		1					ر م س	0
		5.	0	0	0	0	0	0	0	0	0	5.	0	0	0	0	0	0	0	0	0	5.	0	0	3	0 1	٠ ٥		•			2	5.	0	0	٠ د	0	2	0	0	0	0	3	0 1	65.0	•
	STATION	3.0	3.0	3.0	3.0 1	7.0	7.0	7.0	7.0	7.0 1	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	3.0 1	7.0 1	0.0	0.0	0.0	0.0	3.0	0.0	0.0	٠. د د		300	7.0	7.0	7.0	7.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	3.0	73.0	0.

	DEC.	1 1	1	1	1	1	ı	ł	ı	i	ı	i	i	í	ł	î			0.0			1		0				0		0		0.0						ł		- 0		0.0			0
	NOV.	0.0	0 0							0.0								ı	ŧ		0.0			ı	ı	I	1	1 1		1 1	1	1	1	6	í	ŧ	1	1	1	1	ı	1	1 1	1	
	ocr.	0.0	0 0												0	0					0		0		0	0	0		0	0	0	0 (0.0			0
	SEP.	1 (1	ı	ł	ı	ı	i	1	I	ı	ı	ı	ı	í	ŀ			0.0	0	0	0			0		0	0		0	0	9 0			0			1				0.0	0	0	0
	AUG.	0.0	0 0						0							0		1	ł	ł	ı	I	ŀ	ı	I	ŀ	t	l {	ı	1 1	1	+ 1	1	ı	1	l	1	1	1	ı	ı	l	1		
(cont.)	JULY	4.0	0 0													0												0			0	0 1										0.0			
ringens	JUNE	ŧ (t	ı	ı	ι	ŧ	ł	ı	ı	ţ	i	ŀ	I	ı	í	ı	ı	ı	ı	ı	1	ì	1	ı	í	1	l 1	1	l f		1	1	i	ı	1	ŀ	1	ı			0.0	0	0	
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Lestidiops	APR.	1 1	- 1	1		0.0					0					0	0			0			0		0	0		4		0	9	0 1		6			. 0	- 0				0.0		0	
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	FEB.	4.6	0 1	0			0					0						- 0							9	0		0		0	0							1	1			3.2			
	JAN.	0.0	0 1									0		0	0		0							0	0	0			0	0										. 0	0	0.0			0
		0.06		0	0.	0	3	· 0	÷	0 0		ς,	-	0 0		· ·	0	5	0	5	0	0	0	5	0	. 0		·	0 0			٠	0	0	0	0.	0.	0	0	2.	5.				•
	STATION	73.0	2.0	7.0	7.0	7.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	7.0	7.0	0.7	7.0	7.0	7.0	0.0	0.0	0.0	0.0		10.0	200	0.0		3.0	3.0	3.0	3.0	3.0 1	3.0 1	3.0 1	7.0	7.0	7.0	0.7	0.7	0.

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	NOV.	ŧ	1	ı	ŀ	i	ı	ı	ì	ł	ì	ı	(1	ı	ı	ı	ı	ł	1	ļ	i	1	1	1	ı	1	1	1	ı	ı	ı	ı	i	1	ı	ı	ı	ı	1	ı	ě				0		•
	OCT.				0	0		- 0		-) (0	0	0	0		'n			9				0		; =			0	6		•										0.0		ı	1	ı	1	
	SEP.			0		0				-		0		0	0	0	0						1					0	0	0			0 (•
	AUG.	1	1	ł	ı	ı	ı	ı	ı	1	ı	!		ı	1	ł	ı	ı	1	ı	1	ı	ı	ı	ŀ	ı	ł	å	ł	١	í	ł	ı	ı	ŧ	i	ł	ı	1	1	ı	ı	ı	ı	1	ı	1 1	
(cont.)	JULY										•		0					0				1			0	0	0	0	0	٠	٠ د	0														m o	30.0	
ringens	JUNE								- 0		0	0	9	0		- 0	. 0						b		0		0	0	0		0	8		• •							-).)	0
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Lestidiops	APR.				- 0				-		0		0				- 0				•	0	0	0	0	0		0	0	0		0	•	8	0 () · ·	
	MAR.		1	ı	1	ţ	1	1	ŀ	1	ı	ı	I	ļ	ŀ	ł	1	1	1	ı	ı	ı	ı	1		1 1	;		ı	1		l I		ı	1	ı	1	ı	1	ı	1	ı	1	i			0.0	
	FEB.		1		. 0					0	0	ė.						- 0			0	0			0		5 L	0						•								0.0				ı	1 :	l
	JAN.					. 6		- 0		0	0				0		-				Ģ.	0						0	0					0			•			• •		0.0				0.0	ł	ı
		10	0	0	5.	0	5	0	1	·			0	0	6	0	5	0	·		טעס	1 c				n		n		٠ ٥				. ע				5	0	0	6	, L	0	0	0.	0	80.0	n
	STATION	7	2	0.0	00	00	00	00			9 6	000	00	00	03.	03.	03.	03.	200	000	000	000	000	200	000		07.	07.	07.0	07.	07.0			90		101	101	13.	13.	13.	13	17.	17.	17.	17.	20.	120.0	63.

TABLE 4. (cont.)

TABLE 4. (cont.)

	DEC.	00 1 1 00 00 00 00 00 00 00 00 00 00 00	DEC.	
	NOV.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	NOV.	
	OCT.	00,000000000000000000000000000000000000	OCT.	1110000000001 #000010000
	SEP.	00 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	SEP.	0.0
	AUG.	1 1 1 1 1 1 1 1 1 1	AUG.	
(cont.)	JULY	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	JULY	0,0000000000000000000000000000000000000
s spp.	JUNE	0.0 3.0 	JUNE	
Scopelosaurus	MAY	SCOPe3	MAY	
Scope	APR.	mom Ovrocommocock	APR.	000000
	MAR.		MAR.	
	FEB.	00 00 0000000000	FEB.	0000 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	JAN.	000000000000000000000000000000000000000	JAN.	
	N.	70.0 120.0 120.0 120.0 90.0 90.0 40.0 70.0 40.0 30.0	979	120.0 120.0 120.0 80.0 90.0 60.0 60.0 60.0 110.0 70.0 70.0 80.0
	STATION	990.0 990.0 993.0 993.0 993.0 993.0 993.0 993.0 993.0 993.0	STATION	440 550 560 660 670 700 700 710 710 710 880 883 900 883 900 883 900 900 900 900 900 900 900 90

	DEC.		
	NOV.	0.0000000000000000000000000000000000000	
	OCT.		
	SEP.	1000 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
	AUG.		
cont.)	JULY		
_	JUNE		
copelarchidae	MAY	000000000000000000000000000000000000000	
Sco	APR.	000000000000000000000000000000000000000	
	FEB.		
	JAN.	Ommmoo 9600000000000000000000000000000000000	
	ON	140.00 140.00	
	STATIO	22222200000000000000000000000000000000	

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1	DEC.	
	NOV.	000000000000000000000000000000000000000
Myctophidae (cont.)	OCT.	
 	SEP.	
	AUG.	00000000
ıt.)	JULY	0000000 1 000000 0000 00000 00000 0000 0000 0000 0000
dae (cor	JUNE	11111111111111111111111111111111111111
ctophi	MAY	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
My	APR.	1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
	MAR.	0 m
	FEB.	000 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	JAN.	
	ON	65.0 65.0 65.0 65.0 65.0 65.0 65.0 65.0 65.0 65.0 65.0 60.0
	STATIO	0.000 0.000

1	DEC.	0.0	4									0				0	0		9					•						0	0				0			0			0 (
	NOV.		1 1	1	1	ŧ	ı	ŀ	ž	ł	ŀ	ı	ı	ı	I	ı	ŀ	ŀ	1	1	1 1		l I	6	ŀ	ļ	1	ı	i	Į.	1	+	I	I	ŧ	ı	ı	I	1 1	. (1	1	
 	OCT.	0.0							0		0	0						0	0	0		0	0	0										- 0		•		0	0		0 0	-		
	SEP.	0.0		0 0												4		0	0	3		0		0																0				
	AUG.	ı	1 1	1	1	1	ì	i	1	1	ŧ	ı	ı	1	1	ı	ı	i	ŀ	l	l i	1 1	1 1	ı	ı	ı	ı	ı	ı	ı	ll	1	1	ŧ	ı	1	ŀ	ı	1	ı	1 1	4	ı	
ıt.)	JULY	7.6		0 0				0	- 0								0	0	0				0							0		, 0										0 1		
Myctophidae (cont.	JUNE	3.0	0	0 (2		2	0		8	0	0	0	9 (0		0		0	0	0	0 0		0	- 6	9			0 0				0		0						
ctophic	MAY	ı	ı i	1	1	ı	1	ı	ı	ŧ	1	ł	ı	ı	ı	1	ł	ı	ŀ	1	į i		1 1	- 1	1	1	1	ı	ı	1	ł I	ı	1	ł	ı	ı	i	ı	ı	1	1 1	ŀ	1	
My	APR.	12.9	0									0		٠ ت					0		0	0	0	0	9 6				0	0 (0									0	0	0 1		
	MAR.	ı	1 1	. 1	1	ı	ı	ı	ı	ı	1	1	ı	I	ı	ı	1	1	1	ı	1	ı	1 1	ı	- 1	1	ı	ŀ	ı	ŀ	1	- 1	ł	i	ı	ı	1	ı	ı	I	8 1	1	ł	
	FEB.	0.0		0 0		1				0						0		0		o		0		0	- 0	- 0				0									0	٠		0 1	7.0	
	JAN.	6.3	•	0 (- 0				0		0		4		0					0					0 1						0					0 0	
		45.0	0 u	000	0	0	0	0	5.	0	5	0	5	0	0	0.	0	វា	, ,		٠ د د	• •		د	, in	0	5	0.	5	0		50	5	0.	5.	0	0	0	٠ د					
	STATION	97.0			7.	7.	97.	00	00	00.	000	00.	00	00	000	000	03.	03.	500	200	03.	200	003		07.	07.	07.	07.	07.	07.	07.0		10.	10.	10.	10.	10.	13.	13.	15	, ,	36	13.	

	DBC.	DEC.	
	NOV.		
	OCT.	3.1 3.1 3.1 3.1 3.1 3.1 3.1 3.1	0
	SEP.	SEP.	
	AUG.	Aug.	
nt.)	JULY	10000000000000000000000000000000000000	4
lae (cor	JUNE	1511	l
Myctophidae (cont.	MAY	00.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	
My	APR.	24.000000000000000000000000000000000000	1
	MAR.	7.2 10.0 11.5 10.0 10.0 10.0 10.0 10.0 10.0	
	FEB.	PEB.	
	JAN.	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
	22	N N N N N N N N N N N N N N N N N N N	ņ
	STATION		

	DEC.	1 1	ı	ı	ı	1 1	ı	ı	ı	ł	1	ŧ	1	0 " 0	i I		0	23.0		ı	1	0.0		ı	ı								0	•	0		0	0	0	0.0			
	NOV.	000			0.0					0.0					0.0		ı	1	1	1	1	i	ı	ı	ı	1		ı	t	i	1	ı	1	I	ŀ	1	ı	1 1		ı	ŀ	ı	
	OCT.	0.0			0.0			0.0	1									, L		0		0						0 (0	0					0.0			
	SEP.	1 1	ı	ŀ	ı	l I	ı	ı	ı	ł	ı	1			7		0			1	1	0.0		ı	ı							0	0	0						6.5			
t.)	AUG.	0.0				0	-			0.0				1	1	1 1	ı	1	1	1	1	ı	ı	i	ı	ł	1 1	ŧ	1	1	ı	1	1	ŀ	ì	ı	1	1	1	! (ı	ŧ	
(cont.)	JULY	13.8			0.0		-			- 4		0.			0		0	0 0		2		0		0		2		0 (0			0	000	0		
townsendi	JUNE	1 1	ı	i	I	1 1	ı	i	1	ı	1	ì	ŧ	ŀ	1	ı		1	ı	1	ı	i	ı	ı	1		0									0		0		900			
	MAY	0.0			00	0	4		0										0	1	1	3.0		1	ı	ı	1 1	. 1	1	ı	1	í	1	ł	í	I	ı	ŀ	i	l t	1	1	
Ceratoscopelus	APR.	1 1	ţ	1	ı	1 1										0	0	000	6 (0	-	0			0	0		0	0 (0			0					
Ceı	MAR.		1	ı	ı	† †	ı	ì	ı	i	ı	1	1	ŀ	í	3		ı	1	ı	ı	1	ı	I	ı	ı	1 1		ı	ı	1	ł	1	ı	ı	4	ŀ	ţ	I	1 1	1	1	
	FEB.	0.0					0	0 (•							0	0			ı	ı				ı	ı	1 1		0 1		0					0	0	- 6			1 1		
	JAN.	0.0			0.0			0 1							0	0				0 (0	- 0				0	0	0 (0		- 0	0			0 0	
	ON	65.0	90.	0.	0.					. 0	0	0	0.	5	0	÷ 0	÷ c	•			40.	80.	90.	0	20.	40.			٠ ،	0	0	0.	0	0	5	0.	3	0 1	0 0	000	0	2	
	STATIC	63.0	0	0	ش	2 5	, ,	7 .			0	3	3.	7	7	•						 m	3.	3.	m	m i		000		00	00	00.	00.	03.	03.	03.	03.	03.	200	。 ? ~	03.	07.	

TABLE 4. (cont.)

	DEC.		DEC.	1 1 1 1
	NOV.		NOV.	0000
	OCT.	10000000000000000000000000000000000000	OCT.	0000
	SEP.	00000000000000000000000000000000000000	SEP.	1111
(cont.)	AUG.		AUG.	9.8 6.4 0.0
	JULY	18800000000000000000000000000000000000	JULY	0.0 10.3 14.8 24.4
townsendi	JUNE	22 22 22 22 22 22 22 22 22 22 22 22 22	JUNE	1 1 1 1
	MAY	l	MAY	0.00
Ceratoscopelus	APR.		APR.	
Ce	MAR.		MAR.	111
	FEB.	0w000000000000000000000000000000000000	FEB.	0000
	JAN.	000000000000000000000000000000000000000	JAN.	0.00
	Z	8800.000000000000000000000000000000000	Z	60.0 65.0 70.0 80.0
	STATION	107.0 1007.0 1007.0 1007.0 1007.0 1100.0 1100.0 11100.0 1120.0 1120.0 1120.0 1120.0 1120.0 1120.0 1120.0 1120.0 1120.0 1120.0	STATION	60.09

	DEC.	0.
	NOV.	
	OCT.	
	SEP.	
	AUG.	
(cont.)	JULY	10000000000000000000000000000000000000
spp. (co	JUNE	
Diaphus s	MAY	200 200 200 200 200 200 200 200 200 200
Di	APR.	
	MAR.	
	FEE.	
	JAN.	
	23	
	STATION	00000000000000000000000000000000000000

	DEC.	0006 0000000000000000000000000000000000	DEC.	000000000000000000000000000000000000000
	NOV.		NOV.	000 88111111110000000000000000000000000
	OCT.	0.0000000000000000000000000000000000000	OCT.	0.00
	SEP.	11.4 11.4 11.4 11.4 11.6 11.6 11.6 11.6	SEP.	13.0 13.0 12.8 12.0 12.0 6.1 13.0 13.2 13.2 13.2 13.2 13.0 13.0 13.0 13.0 13.0 13.0 13.0 13.0
	AUG.		AUG.	
it.)	JULY	80 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0	JULY	800000000000000000000000000000000000000
spp. (cont.	JUNE		JUNE	000000000000000000000000000000000000000
Diaphus sp	MAY	0.0 0.0 0.0 0.0 0.0 0.0 0.0 - - - - - -	MAY	
Dia	APR.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	APR.	000000000000000000000000000000000000000
	MAR.	2.9	MAR.	0000000
	FEB.	00001100000001100001	FEB.	000000000111111
	JAN.		JAN.	000000000000000000000000000000000000000
	STATION	90.0 53.0 90.0 90.0 90.0 90.0 90.0 90.0 90.0 9	STATION	93.0 140.0 97.0 90.0 100.0 70.0 103.0 70.0 1107.0 60.0 113.0 70.0 117.0 80.0 117.0 80.0 117.0 80.0 117.0 80.0 1120.0 90.0 120.0 80.0 120.0 80.0 120.0 80.0 120.0 80.0

	DEC.		ı	,	1			1	1	1	1	1	ı	ı	ı	i	i		ı	L	1	1	j	,		ı		L	1		ı		1			1			1				1	ı			1
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	NOV.		ı	1	i	ı	I	ı	i	1	1	ı	1	1	1	ı	1	0.0	0.0	0.0	0.0	3,3	0.0	ı	0.0	0.0	0.0	0.0	0.0	0.0	ı			0.0										0.0			
	OCT.	1	ı	ı	ı	1	F	ı	i	١	ı	ı	1	ı	ı	ł	0.0				0.0					0.0				1.6			0	0.0					ı					0.0		1 0	0.0
	SEP.	i	ı	ı	ı	i	ı	1	ı	ı	ı	ı	ł	1	1	1	ı	ı	ı	ı	ı	ı	ı	ı	1	1	1	ı	ı	1	ı	ı	1	ı	ı	ı	ı	ı	ı	ı	1	ı	1	ì	ı	ı	ı
	AUG.	ı	ı	I	I	ı	ı	1	1	ı	ı	i	ı	1	1	1				9						0.0					ı		0.0	1 4		0.0	٠		ı					0.0			
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ctus spp.	JUNE	ı	ı	ļ	I	ı	ı	ı	ı	i	1	ì	ı	1	ı	ı	ı	ı	1	ı	ı	1	ı	1	1	ı	ı	ı	ı	i	í	1	ı	1	l	ı	1	ı	1	ŀ	1	ı	ı	ı	I	ı	ı
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	MAR.	ž	ı	ı	1	l	i	ı	ı	1	1	ļ	ı	ı	ı	ı	ı	1	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	í	ı	ı	ı	F	1	ı	ı	i	ı	ı	ı	1	ı	ı	1	i	ł	ı
	FEB.	ì	ı	ı	ı	ı				3.2					2												0	. 0									÷.		ж ж					2.6			
	JAN.		3.1				- 6	i	ł		3.5		1	ł	ı			ú			0.0					9.5	0				1		0	0.0			9		i					0.0			2.0
	N	5	0.	5	0	90.	0	2	0.	70.	0.	52.	80.	00.	0.	00.	0	2.	0.	5.	0.	0	90.	0	2	د	0	0		90.	÷	20.	o C		0.0			90.	. 0	20.	<u>.</u>	٠ ص	0	65.0	0:	0.0	•
	STATION	m	m	-	7	7.0	7.0	Ö.	0	0.0	0.0	3.0	3.0	3.0	7.0	7.0	0	0	0.	0	ď	o.	0.0	0.0	e.	e.	m .	m.	m.	0.0	3.0	3.0	7.	•	• [• [,	0./	0 - 7	0.7	0	0	0	70.0	<u>.</u>	<u>.</u>	

	DEC.	0.20.0000000000000000000000000000000000
	NOV.	00 000000000000000000000000000000000000
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	AUG.	1
(cont.)	JULY	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
spp.	JUNE	
Lampanyctus	MAY	20.00 20.01 20.01 20.00
Lamp	APR.	200.00 10
	MAR.	E
	FEB.	111 111.6 11.6 11.6 11.6 11.6 11.6 11.6
	JAN.	211.5 113.0 113.0 113.0 114.0 115.0
	STATION	70.0 70.0 70.0 73.0 77.0 80.0 77.0 80.0

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	D .	3				0 (• •		0.		0.	0.		? .	0		4	0			0.				0		- 0	0.	0.													
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	STATI	90.		0	\sim $^{\circ}$	n m) (1)	n	3	3	3	3	<u>رب</u>	7) (ר כ	つい	3 (26	٦.	- [-	7	7	1	- 1	- [,	00	00	00	000		000	00	00	00	00	03	03	רו רו	200	03	

\$ 1 1 1 1	DEC.	
1	NOV	
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(.	Y AUG	
o. (cont.	NE JULY	00000000000000000000000000000000000000
ctus spp.	Y JUNE	
Lampanyctus	R. MA	
I	AR. APR	30000000000000000000000000000000000000
	FEB. M	000000000000000000000000000000000000
	JAN. F	COMMON CONTRACTION CONTRACTI
	STATION	10000000000000000000000000000000000000

TABLE 4. (cont.)

	DEC.	000000000000000000000000000000000000000	DEC.	0.000	DEC.	B
	NOV.	000000000000000000000000000000000000000	NOV.	000000000000000000000000000000000000000	NOV.	ı
	OCT.	10.9 10.9 10.0 10.0 10.0 10.0 10.0 10.0	OCT.	0000000000000	OCT.	1
	SEP.	0.0000000000000000000000000000000000000	SEP.	00000	SEP.	1
	AUG.		AUG.	000000000000000000000000000000000000000	AUG.	t
cont.)	JULY	33.4 13.0 13.0 0.0 0.0 0.0 0.0 23.5 0.0 23.2 9.6	JULY	3.4 3.6 0.0 12.0 12.0 4.1 40.4 6.4 6.7 6.7 6.7 6.7	JULY	
spp. (JUNE	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	JUNE	- 20 - 20 - 12 - 12 - 4 - 4 - 6 - 6 - 6 - 0 0 0 0 0 0 0 0	JUNE	
Lampanyctus	MAY	Lampanyctus	MAY	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	MAY	•
Lamp	APR.	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	APR.	2.8 2.8 0.0 0.0 0.0	APR.	
	MAR.	1 3 2 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	MAR.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	MAR.	ı
	FEB.		FEB.	00000000000000	FEB.	18.4
	JAN.		JAN.	0000000000000	JAN.	-
	STATION	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	TATION	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	LION	0.06 0.
	STA	1233. 1233. 1227. 1227. 1230. 1233. 1237. 1237.	STAT	60 67. 73. 77. 77. 77. 77. 880. 100.	STATION	53.

	DEC.	0000 moros 000000
	NOV.	00000000000000000000000000000000000000
	OCT.	
	SEP.	000000000000000000000000000000000000000
_	AUG.	000001000000000000000000000000000000000
(cont.	JULY	2 2 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
ritteri	JUNE	
	MAY	250
Lampanyctus	APR.	20000000000000000000000000000000000000
	MAR.	
	FEB.	00000000000000000000000000000000000000
	JAN.	40000000000000000000000000000000000000
	22	800.0000000000000000000000000000000000
	STATION	66000000000000000000000000000000000000

	DEC.	0.0		0					0			0										0		0	0 (0.0				6		0 1										0	
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	OCT.	0.0				•			0	•													0		•														0		0		
	SEP.	0.0					0	0																		0.0					0	•			- 6			-		0			
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(cont.	JULY	0.0						0		0			0 1	9 (- 4										00						6								0			
ritteri	JUNE	ı											0		0									0	0				0				0 0			0		0			0	0.0	
- 1	MAY	0.0	1 1	ı	į	ı	ı	I	ı	1			1	1	ł	1	1	1	ı	í	i	ı	1	il	. 1	ı	ì	ı	ı	ı	1 (1	1	ı	1	1	ı	ı	ţ	ı	1	1	
Lampanyctus	APR.	0.0							٠							4		- 9							0															٠		000	
I	MAR.	ļ	1 1	1	ı	ı	i	i		1	1 1		1	1	1	1	1	1	i	ı	1	ı	ı	t I	1	ı	1	1	í	ı	1 (1 1	1	1	1	1	E	ı	ı	ı	1 !	1	
	FEB.	16.4				٠ د			0	Į.	1 (٠ د	0	0		2		0		- 6	0		0	0	0 0	9		6	9	0		0 0				- 0				0	2.5	•
	JAN.	0.0							5,	0		0	•	0					5.						0	0 0					4		0 0										•
		0		0	5.	0	٠ د	٥,	٠ د	· .		•	د	, _	, ru		0	0	0	9.	S.	0	٠,	'nc			, in	0	5.	0	Λo		. 0	2	5	0.	5.	0	0	0		0)
	STATION	93.0	0.4	7.0	7.0	7.0	0.7	0.7	0.7	0.0	0.7	0.00			0.00	0.00	0.00	0.00	0.00	03.0	03.0	03.0	03.0	03.0	000	03.0	07.0	0.70	0.70	07.0	0.7.0	0.70	0.7.0	10.0	10.01	10.0	10.0	10.0	10.0	10.0	0.0	0.0	

	DEC.	0.00		DEC.	0.00		DEC.	0.0		0.0	0.0	0.0	000	0.0	000	0.00	000	000	000
	NOV.	0.0		NOV.	3.1		NOV.	1 1	1 1	i i	1 1	1 1	1 1	i I	i	1 1		9 9	000
	OCT.	0.0		OCT.			OCT.	0.0	3.2	m 0 .0	3.2	00.0	0.0	4.6	0.00	0.00	3.5	1 1	1 1 1
	SEP.	0000		SEP.	0.000		SEP.	0.0				0 0			0 0	0 0			28.2
(AUG.	1111		AUG.			AUG.	1-1	1 1	1-1	l i	1 1	ŧΙ	1 1	ŧ	1 1	1 1	1 1	1 1 1
(cont.	JULY	0000	viae	JULY	0.0000000000000000000000000000000000000	sudens	JULY					0 0			0 0	0 0	0 0	0 0	0.00
ritteri	JUNE	3.1 3.2 0.0	s valdiviae	JUNE	0.00	resplendens	JUNE	1 1							0 0	0 0	0 0	0 0	0.00
	MAY	1111	Notolychnus	MAY	80.001111	Notoscopelus	MAY	0.0	1 1	1-1	1 1	1 1	1-1	1 1	ı	l I	1 1	1 1	1 1 1
Lampanyctus	APR.	0.0 2.7 5.6 3.2	Not	APR.	0.0000000000000000000000000000000000000	Notos	APR.	0 0				8 0			0 0	0 0	0 0	0 0	000
	MAR.	1111		MAR.	0.0		MAR.	1 1	1 1	1 1	Į Į	1 1	1 1	1 1	ı	1 1	1 1		000
	FEB.	0000		FEB.			FEB.	0.0		00.0	0 0	0 0	0 0		0 0	0 0	0 0		1 1
	JAN.	0.00		JAN.	000 000		JAN.	0.0		0.0		0 0					0 0	0.0	t I I
	NC	80.0 35.0 50.0 60.0		NC	110.0 90.0 140.0 140.0 80.0 80.0		NC	00	50.	000		00	00	0.0			000	000	45.0 60.0
	STATION	113.0 117.0 117.0		STATION	70.0 90.0 93.0 103.0		STATION	mm	93.	00.	03.	03.	07.	07.	10.	13.	13.	17.	123.0

TABLE 4. (cont.)

AAR. APR. MAY JUNE JULY AUG. SEP. OCT. NOV. DEC.
Stenobrachius leucopsarus APR. MAY JUNE JULY AUG. SEP. OCT. NOV.
MON. SEP. OCT. NOV. S
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1 1 1

Stenobrachius leucopsarus (cont.)

DEC.		ı	1	1	1	1	1	0	0	0	0	0	0	0	Õ	0 (o c		0	0	<u>ا</u>	0		0	0	0	.	> 0) C				0	0	0	0	0	0	0	0	0	0	_
YOU TO	-	!	1	1	1	1	0.	0 0.	0 0.	0 0.	0 0.	0.	0 0.	0 0.	0.0	0.00	0.0	0.00	0.	0.	0.	0.	1	0.	.0	.0	0.0	÷.						0.0	.0	0	.0 0.	.0 0.	0.	.0 0.	.0	.0 0.	.0 0.	.0	.0 0.
SEP. OCT		1	-	1	1	1	1	1	1	1	1	1	1	1	اد	١				0				0									1	1		1	0 -	0	-	0	0	0	0 -	0	- 0
AUG.		1	ı	ı	ı	1	- 0	- 0	0				0		0			0	0		0	0						0	000	0	0	0	0 .		0			- 0	0					0	
JULY		1	ı	ı	ı	ı	0.0	0.0	0.0	3.4	رى مئا	4.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 (0.0	ı	0.0	(O)	ന	0.0	000	000		200	0 0) rd	1 m	0.0	1	თ ო	0.0	1	5.00	0.0	0.0	0.0	0.0	0.0
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R. APR		ı	1	l	i	1	ı	İ	1	1	ı	1	1	ı	1	1	1	ı	ı	ı	1	ı	ŀ	1	1	Ī	Î	I			1	ı	1	1	ı	date	ı	l	8	1	ţ	80	l	I	1
FEB. MAI		_	-	5	6	2	2	9	7.	9	2.	0.	о С		-	0.0	5	٠ د د	-	S.	6.1	3.0	0.6	٠,	2.3	6.6	ή,		7.5	•	י) ין	10	10	- 10	2	70	8	3	-	2	9	3	7	0	0.0
JAN	1	1		1	7		01.4	30.5	19.2 44	3.0 19	28.8 3	9.00	0.0	6.6	m . m	1.3	47.1	5.0 10	3.0 26	9.6	8.7	4.4	-	22.2	19.2	0.3	22.4 27	91.1	14. d	0.0	ນ ແ ວ ແ	מים ב	ים יוני	82.5	2.2		8.2 25	.7 2		8.3	13.6	79.0	142.9 3	31.7 2	36.2 12
N(<u>_</u>		0	0	0	50.	2.	5	0.	5.	0.	0	0	0	7:	ກໍ	٠,	ŝ	0	0	90.	0	φ,	0	in o		٠ د د	70.0		> r	40	, _	10	0	S	0	0	0	50.	3	0	5	0	0
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Stenobrachius leucopsarus (cont.)

DEC. 00000000 NOV OCT 000000000000000 SEP. JULY JUNE 0.00 10. 12.8 19.7 152.8 72.8 72.8 0.0 0.0 0.0 0.0 63.2 15.6 47.7 47.7 7.11 00100 25.00 MAR 36.4 337.1 50.1 50.1 20.5 20.5 23.9 81.9 81.9 16.5 10.4 10.4 3.3 13.4 13.4 13.4 13.4 13.4 13.6 1 FEB JAN. STATION 733.0 7777.0

TABLE 4. (cont.)

	DEC.		DEC.	+ + + + + + + + + + + + + + + + + + + +
	NON		NOV	3.20
	OCT.		OCT.	44.00.00 0.00.00
	SEP.		SEP.	210000
(cont.)	Y AUG	000000000000000000000000000000000000000	AUG	00000000000000000000000000000000000000
	JUL	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	IE JULY	0 3 3 6 0
leucopsarus	JONE		JUNE	0000000
Stenobrachius	A. MAY	10000000000000000000000000000000000000	. MAY	00000
Stenob	R. APR	12. 12. 12. 12. 12. 12. 12. 12. 12. 12.	R. APR	1100000
	EB. MAR	00000 00000000 00000000000000000000000	B. MAR	00000
		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	AN. FE	000000
	JAN		JA	000000
	ATION	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	ATION	7.0 55. 7.0 80. 7.0 80. 0.0 52. 0.0 60. 2.0 47.
	ST		ST	0778888

	DEC.		
•	NOV.	700000 000 000 000 000 000 000 000 000	
	OCT.	31000000000000000000000000000000000000	
	SEP.	10000000000000000000000000000000000000	
•	AUG.	000000111111111111111111111111111111111	
(cont.)	JULY	13.6 13.6 17.1 13.6 17.1 17.1 17.1 17.1 17.1 17.1 17.1 17	
Triphoturus mexicanus	JUNE	55000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
urus me	MAY	000000000000000000000000000000000000000	
riphot	APR.	0000000001 000001 0000001 0000000000000	
1	MAR.	0 0	
	FEB.	000000000000000000000000000000000000000	
	JAN.		
	N	51.0 52.0 52.0 52.0 52.0 52.0 60.0	
	STATION		

(cont.
mexicanus
iphoturus
Tri

DEC.		
NOV.		1 1
OCT.	36.8 16.6 10.8 10.8 10.0 10.0 10.0 10.0 10.0 10.0	
SEP.	287.9 17.99 17.99 17.99 17.99 17.99 187.9	4 + 4 +
AUG.		1 1 1 1
JULY	84.8 84.8 48.7 48.7 40.3 10.0	
JUNE	1889 1889 1889 1889 1899 1899 1899 1899	
MAY		1 1 1 1
APR.	133.20 13	
MAR.		1 1 1 1
FEB.	00000 111000000000000000000000000000000	
JAN.		
NC	40.0 40.0	000
STATION	997.0 99	100.

MAX JUNE JULY AUG. SEP. OCT. NOV. DBC. 26.9 46.3 - 99.0 19.4 - 0.0 115.2 64.8 - 54.9 28.8 - 0.0 115.2 64.8 - 54.9 28.8 - 0.0 115.2 64.8 - 54.9 28.8 - 0.0 115.2 64.8 - 54.9 28.8 - 0.0 115.2 64.8 - 55.4 29.8 - 0.0 115.2 64.8 - 55.4 29.8 - 0.0 115.2 64.8 - 55.4 29.8 - 0.0 115.2 64.8 - 55.4 29.8 - 0.0 115.2 64.8 - 55.4 29.8 - 0.0 115.2 64.8 - 55.4 29.8 - 0.0 115.2 101.8 - 0.0 115.2 101.8 - 0.0 115.2 101.8 - 0.0 115.3 135.7 - 101.8 - 0.0 115.4 - 0.0 115.5 101.8 - 0.0 115.6 101.8 - 0.0 115.7 101.8 - 0.0 115.8 1 101.8 - 0.0 115.9 1 101
26.9 46.3 - 151.0 0.0 - 15.3 0.0 - 15.3 0.0 - 15.3 0.0 - 15.3 0.0 - 15.3 0.0 - 15.3 0.0 - 15.3 0.0 - 15.3 0.0 - 15.3 0.0
26.3 24.4 151.0 0.0
15.7 15.7 15.2 15.2 15.2 15.2 15.2 15.2 15.3
15.2 24.8 29.4 28.8 29.3 29.5 29.3 29.5 29.3 29.5 29.3 29.5 29.3 29.5 29.3 29.5 29.3 29.5 29.3 29.5 29.3 29.5 29.3 29.5 29.3 29.5 29.3 29.5 29.3 29.5 29.3 29.5 29.3 29.5 29.3 29.5
59.0 59.4 29.3 29.5
9.0 23.7 359.5 6.3 - 62.0 95.2 202.0 6.3 - 8.2 24.8 0.0 0.0 - 25.7 101.8 0.0 0.0 - 27.0 101.3 - 7.4.4 - 0.0 23.2 59.5 - 7.4.4 - 0.0 23.2 59.5 - 7.4.4 - 0.0 23.2 59.5 - 10.0 - 0.0 23.4 101.7 - 102.2 - 3.0 0.0 23.4 14.1 0.0 0.0 0.0 0.0 0.0 0.0 2.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.
62.0 95.2 - 202.0 6.3 - 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0
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17.0 11.3 7.2 0.0 0.0 46.6 10.7 10.2 45.6 0.0 40.7 217.6 104.3 45.6 0.0 0.0 14.1 0.0 0.0 0.0 0.0 14.1 0.0 0.0 0.0 0.0 2.5 0.0 0.0 0.0 0.0 2.5 0.0 0.0 0.0 0.0 2.5 0.0 0.0 0.0 0.0 2.1 0.0 0.0 0.0 16.0 2.3 34.9 12.0 0.0 16.0 2.3 34.9 12.0 0.0 16.0 3.3 12.0 0.0 0.0 16.0 46.5 20.0 0.0 0.0 17.6 46.8 12.0 0.0 0.0 18.6 43.5 10.0 0.0 0.0 18.4 113.8 12.0 0.0 0.0 18.4 113.8 12.3 0.0 0.0 18.5 10.0 <t< td=""></t<>
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40.7 217.6 - 60.8 - 3.5 0.0 23.4 270.6 - 104.3 - 3.5 0.0 0.0 14.1 - 0.0 0.0 - 0.0 0.0 2.1 0.0 - 0.0 0.0 0.0 2.5 - 0.0 0.0 0.0 0.0 2.5 - 0.0 0.0 0.0 16.0 2.1 0.0 - 0.0 0.0 16.0 43.3 135.7 - 152.2 0.0 0.0 16.0 143.1 - 152.2 - 12.0 0.0
23.4 270.6 — 104.3 — 30.8 0.0 0.0 0.0 0.0 0.0 — 0.0 0.0 0.0 0.0 — 0.0 0.0 0.0 0.0 — 0.0 0.0 2.5 — 0.0 — 0.0 0.0 2.5 — 0.0 — 0.0 0.0 2.5 — 0.0 — 0.0 16.0 0.0 — 0.0 0.0 0.0 16.0 0.0 — 0.0 0.0 0.0 17.6 0.0 — 0.0 0.0 0.0 17.8 39.2 — 65.0 — 0.0 18.3 248.4 — 13.3 0.0 0.0 18.4 0.0 — 33.3 0.0 0.0 18.5 0.0 — 0.0 0.0 0.0 18.5 0.0 0.0 0.0 0.0 0.0 18.5 0.0 0.0 <td< td=""></td<>
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0.0 82.3 34.9 - 9.4 0. 43.3 135.7 - 159.2 - 12.0 3. 16.0 - - 159.2 - - 0. 16.0 - - 152.2 - 0. 0. 16.0 - - 132.9 - 0. 0. 12.6 0.0 - - 30.9 - 0.0 0. 12.0 0.0 - - 20.8 - 0.0 0. 0. 12.3 348.4 - 6.5 - 0.0 0. <td< td=""></td<>
135.7 522.7 12.0 16.0 159.2 16.0 16.0 152.8 12.3 16.0 132.9 12.3 12.6 12.3 0.0 12.6 0.0 0.0 12.6 0.0 0.0 12.6 0.0 0.0 12.8 0.0 0.0 12.3 113.8 0.0 12.3 113.8 0.0 13.4 113.8 0.0 13.4 113.8 0.0 13.4 10.0 0.0 13.4 10.0 0.0 11.8 66.2 0.0 11.8 66.2 0.0 11.9 0.0 0.0 11.9 0.0 0.0 11.9 0.0 0.0 11.9 0.0 0.0 11.9 0.0 0.0 11.0 0.0 0.0 11.0 0.0 0.0 11.0 0.0 0.0 11.0 0.0 0.0 11.0 0.0 0.0 11.0 0.0 0.0 11.0 0.0 0.0 11.0 0.0 0.0
16.0 - - 159.2 - - 0.0 57.6 143.1 - 152.8 - - 0.0 46.5 20.3 - 65.0 - 0.0 0.0 12.6 - 30.9 - 0.0 0.0 0.0 7.6 - 20.8 - 0.0 71.8 39.2 - 0.0 0.0 25.3 348.4 - 6.8 - 0.0 25.3 348.4 - 6.8 - 0.0 25.3 348.4 - 6.8 - 0.0 0.0 0.0 - 3.3 0.0 28.5 - 113.8 - 3.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 11.8 66.2 - 267.9 8.7 8.8 21.6 50.0 - 12.2 2.8 3.1 10.9 0.0 0.0 0.0 0.0 0.0 10.0
87.4 74.1 152.8 - 12.3 0. 46.5 20.3 - 65.0 - 96.0 0. 12.6 - 30.9 - 96.0 0. 0.0 0.0 - 33.2 - 0. 71.8 39.2 - 0.0 0. 25.3 348.4 - 6.8 - 0.0 0. 12.3 250.1 - 103.6 - 3.3 0. 28.5 43.5 - 109.6 - 3.1 0. 0.0 23.4 - 0.0 0.0 0. 13.4 87.9 - 0.0 0.0 0. 21.5 48.8 8.8 8.8 8.8 37.7 50.1 - 212.4 8.8 8.8 10.9 7.3 - 104.9 6.0 0.0 13.0 27.4 - 104.9 6.0 0.0 21.6 50.0 - 153.2 3.0 - 25.0 36.8 - 153.2 3.0 - 25.0 36.8 - 153.2 3.0 -
46.5 20.3 - 508.3 0. 46.5 20.3 - 55.0 - 96.0 0. 12.6 - 30.9 - 96.0 0. 0.0 0.0 - 33.2 - 0.0 0. 12.3 39.2 - 6.8 - 0.0 0. 0. 12.3 250.1 - 113.8 - 3.3 0. <t< td=""></t<>
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37.7 50.1 59.0 9.9 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
36.7 92.0 50.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.
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36.7 92.0 50.0 36.8

	DEC.	0.00110	DEC.	0.0	DEC.	000000000000000000000000000000000000000
	NOV.	17.9 8.2 8.0 0.0 10.0 8.4 4.4	NOV.	3.00	NOV.	0000000
	ocr.	15.4 13.2 13.1 33.1 0.0 0.0 6.4 6.4	OCT.	0.0	OCT.	000000000000000000000000000000000000000
	SEP.	11111111	SEP.	0.0	SEP.	
(•:	AUG.	11111111	AUG.	0.0	AUG.	18000000
(cont.	JULY	10.6 32.0 32.6 32.6 45.5 65.0 19.3 38.4	JULY	0.0 0.0 spp.	JULY	- 00000mm0000mm00000004
<i>xicanus</i>	JUNE		JUNE		JUNE	
Triphoturus mexicanus	MAY	- 16.1 - 2.9 3.1 - 0.0 - 0.0 - 3.1 - 25.6 - 15.0 Centrobranchus	MAY	0.0 0.0 Diogenichthys	MAY	000000000000000000000000000000000000000
riphot	APR.	2.8 2.8 2.9 2.9 145.8 0.0 0.0 6.0 12.7 23.4	APR.	0.0 0.0	APR.	111100000000000000000000000000000000000
I	MAR.	10.5 18.9 35.8 35.8 0.0 23.8 13.2	MAR.	0.0	MAR.	0
	FEB.	11111111	FEB.	0.0	FEB.	0.0000000000000000000000000000000000000
	JAN.	11111111	JAN.	3.2	JAN.	20000000000000000000000000000000000000
	2	860.0 800.0 800.0 800.0 800.0 800.0	2	90.0	2	80.00 80.00 80.00 80.00 80.00 80.00 120.00 140.00 140.00 140.00 140.00 100.
	STATION	130.0 133.0 133.0 133.0 137.0 137.0 137.0	STATION	83.0 120.0	STATION	40.00 647.00 73.00 77.00 883.00 883.00 883.00 890.00 900.00 900.00 900.00 900.00 900.00 900.00 9

TABLE 4. (cont.)

	DEC.	DEC.	
	NOV.		
	OCT.	46.06.00.00.00.00.00.00.00.00.00.00.00.00	
	SEP.	00000000000000000000000000000000000000	
	AUG.	AUG. 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
(cont.)	JULY	00.0 00.0	
s spp.	JUNE	H 151	
Diogenichthys	MAY	0.00 0.00	
Dioge	APR.	Dioge	
	MAR.	MAR.	
	FEB.	HEB.	
	JAN.	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
	Z	35.00 ON A 45.00 ON A	
	STATION	003-0 00	

	DEC.	
	NOV.	0 00 0000 00000000000000000000000000000
	OCT.	10000000000000000000000000000000000000
	SEP.	1 1 1 1 1 1 1 1 1 1
it.)	AUG.	101000104401106060006111111111111111111
s (cont.	JULY	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Diogenichthys atlanticus	JUNE	
thys at	MAY	2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
genich	APR.	2 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Dio	MAR.	0.00
	FEB.	41400000
	JAN.	3 3 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
		120.0 12
	STATION	653.0 677.0 770.0 770.0 773.0 773.0 773.0 773.0 777.0 777.0 777.0 777.0 777.0 883.0 88

DEC. NOV OCT SEP. AUG. Diogenichthys atlanticus (cont.) JULY JUNE 0077 MAY 0008 APR. MAR FEB JAN 800141 000044400088904000089000000804400000804440084 STATION

TABLE 4. (cont.)

DEC.	00.000000000000000000000000000000000000	DEC.	000000000000000000000000000000000000000
NOV.	00.00 0.00 0.00 0.00 0.00 0.00 0.00	NOV.	
OCT.	0.0000000000000000000000000000000000000	OCT.	18.33
SEP.	MO00000W000W1	SEP.	00000000000000000000000000000000000000
AUG.		AUG.	
JULY	3.2 3.2 0.0 0.0 0.0 0.0 0.0 0.0	JULY	000000000000000000000000000000000000000
JUNE	7 00000000	JUNE	000000400000000000000000000000000000000
MAY	- - - - - - - - - - - - - - - - - - -	MAY	0.00
APR.	0.0 0.0 7.9 7.9 0.0 0.0 0.0 0.0	APR.	
MAR.	00000000	MAR.	
FEB.	0000	FEB.	2000 2000 3000 3000 3000 3000 3000 3000
JAN.	TO 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	JAN.	28 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
TATION	17.0 50.0 17.0 50.0 17.0 50.0 20.0 35.0 20.0 55.0 20.0 55.0 20.0 90.0 23.0 60.0	STATION	993.0 997.0 9000.0 9000.0 9000.0 9000.0 9000.0 9000.0 9000.0 9000.0 9
	ATION JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEP. OCT. NOV. DEC	ATION JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEP. OCT. NOV. DEC 10.0	ATION JAN, FEB. MAR, APR. MAY JUNE JULY AUG. SEP. OCT. NOV. DEC 7.0 50.0 3.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0

	DEC.	3 3 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6
	NOV.	144.3 144.3 144.3 10.0 10.
	OCT.	0000 0000 0000 0000 0000 0000 0000 0000 0000
	SEP.	1 2222220000000000000000000000000000000
cont.)	AUG.	
_	JULY	177 11 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
aternatus	JUNE	
7	MAY	
Diogenichthys	APR.	121
Di	MAR.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	FEB.	
	JAN.	00000000000000000000000000000000000000
	ON	00000000000000000000000000000000000000
	STATIO	1113 0 0 0 1 1 1 1 1 2 2 3 3 0 0 0 1 1 1 3 3 3 3 0 0 0 1 1 3 3 3 3

	DEC.	1-1-1		DEC.	0.00		DEC.	000000000000000000000000000000000000000
	NOV.	0.0		NOV.	0.011111		NOV.	0.0000000000000000000000000000000000000
	OCT.	6.0 3.2 25.8		OCT.	0.0000		OCT.	000000000000000000000000000000000000000
	SEP.	1-1-1		SEP.	0.00		SEP.	000000000000000000000000000000000000000
it.)	AUG.	1 1 1	1	AUG.	3.0		AUG.	
is (cont.	JULY	0.0	jį	JULY	0.00 0.00	nlus	JULY	
laternatus	JUNE	0.0	a rissoi	JUNE	00.0	tenuiculus	JUNE	0.0000000000000000000000000000000000000
	MAY	1 1 1	Electrona	MAY	0.0111	Gonichthys	MAY	
Diogenichthys	APR.	6.0 41.3 20.4	E	APR.	0000	Goni	APR.	
Dio	MAR.	30.6 39.5		MAR.			MAR.	00000000000000000000000000000000000000
	FEB.			FEB.	1.4		FEB.	100 100 100 100 100 100 100 100 100 100
	JAN.			JAN.	0.0		JAN.	000000000000000000000000000000000000000
	7	40.0 50.0 60.0			90.0 100.0 90.0 120.0 32.0			8480.00 8490.00 8400.00 8400.00 8400.00 840
	STATION	137.0 137.0 137.0		STATION	73.0 77.0 93.0 93.0 107.0		STATION	100.0 103.0 103.0 107.0 107.0 1107.0 1113.0 1117.0 1117.0 1117.0 1120.0 1120.0 123.0 123.0 123.0 127.0 127.0

TABLE 4. (cont.)

	DEC.	0.00	DEC.	000000000000000000000000000000000000000	DEC.	000000000000000000000000000000000000000
	NOV.	000000000000000000000000000000000000000	NOV.	0000000000	NOV.	0
	OCT.	000000000	OCT.	L 00000	OCT.	000 00000000000000000000000000000000000
	SEP.	111111111	SEP.	00,00011111	SEP.	000000000000000000000000000000000000000
(•:	AUG.	11111111	AUG.		AUG.	0.
(cont.	JULY	000000000	JULY	00000000000	JULY	400000000000000000000000000000000000000
niculus	JUNE	- 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0	JUNE	0.0 0.0 2.9 0.0 3.1 0.0 0.0 0.0 0.0	JUNE	110090000000000
Gonichthys tenuiculus	MAY		MAY	mnydobhH	MAY	00
onicht	APR.	000000000	APR.	000000000000000000000000000000000000000	APR.	MX0000000000
9	MAR.	10.1 14.4 10.2 10.2 13.3 13.3 16.9 116.9	MAR.	0.0000000000000000000000000000000000000	MAR.	111111111111
	FEB.	111111111	FEB.	0.000	FEB.	000000000000000000000000000000000000000
	JAN.	1111111111	JAN.	000	JAN.	00000004000000
	Z	8 4 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		40.0 600.0 600.0 750.0 750.0 350.0 350.0	7	70.0 60.0 70.0 70.0 70.0 70.0 70.0 70.0
	STATION	130.0 133.0 133.0 133.0 137.0 137.0	STATION	113.0 113.0 123.0 123.0 123.0 133.0 137.0	STATION	73.0 100.0 100.0 100.0 100.0 107.0 107.0 107.0 110.0

	DEC.	DEC 10 10 10 10 10 10 10 1
	NOV.	23200000000000000000000000000000000000
	OCT.	10000 10
	SEP.	SEP 0.00
	AUG.	ADG ADG ADG ADG ADG ADG ADG ADG ADG ADG
(cont.)	JULY	10.00 0.00
ratum	JUNE	16.00 16
Hygophum atratum	MAY	Hygophum MAX
Hygor	APR.	APR.
	MAR.	MAR.
	FEB.	FEB.
	JAN.	3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3
	ON	50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 60
	STATIO	1113.0 1113.0 1113.0 1117.0 1117.0 1117.0 1120.0

	DEC.	0.0		DEC.	00.00 00	
	NOV.	2.9		NOV.	MOV. 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1
	OCT.	0.0		OCT.	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
	SEP.	3.1		SEP.	SEP 000000000000000000000000000000000000	0.0
_	AUG.	1 1		AUG.	AUG	ı
(cont.	JULY	0.0		JULY	July July 14.000000000000000000000000000000000000	0.0
ardtii	JUNE	0.0	a rara	JUNE	nitidulum DINE JUNE JUNE JUNE 	
Hygophum reinhardtii	MAY	1.1	Loweina	MAY	Myctophum Myctophum MAX MAX 13.3 0.0 1.0 1.0 1.0 1.0 1.0 1.	ı
Hygophu	APR.	0.0		APR.	APR. APR. 12.00.00.00.00.00.00.00.00.00.00.00.00.00	
	MAR.	0.0		MAR.	MAR.	ı
	FEB.	0.0		FEB.	1 HEB 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
	JAN.	0.0		JAN.	O.00.00 O.00.0	
	Z	80.0		7.	NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN	5
	STATION	113.0		STATION	90.0 110.0 1120.0 120.0 123.0 123.0 123.0 127.0 90.0 90.0 90.0 90.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0	07.

TABLE 4. (cont.)

	DEC.	000000000000000000000000000000000000000	DEC.	1 1	í	i	í	1 1	i	ı	i	í	ı	ł	1 1	ı	ì	i	1	i	ı	ı
	NOV.	000000000000000000000000000000000000000	NOV.		1	ı	ı	1 1	- 1	ı	1	ı	ŧ	l	1 1	i	ı	ł	i	ı	ı	i
1 0 0 1 1 1	OCT.	0.00	OCT.	1	ı	ı		i i	1	ı	1	ı	1	ı		ı	ì	ı	ı	i	ł	1
	SEP.	0w00000w00000ww1111	· · · · · · · · · · · · · · · · · · ·														1	1	ı	ı	i	ı
·	AUG.		AUG.		l	ı	I	1	1 1	ı	ı	l	1	1	1 1	. 1	1	i	ł	ı	ı	ı
(cont.)	JULY	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	JULY		1	i	ł	1	i I	ı	ı	ŧ	ı	ı	1	1	ı	ı	ı	ı	į	ı
idulum	JUNE		JUNE		ı	ı	ı	1	1 1	1	ı	ı	ı	ı	1		ı	ı	1	1	ı	i
Myctophum nitidulum	MAY	6.2 - 0 3 6.0 - 3 6.0 - 3 6.0 - 0 3 6.0 - 0 0 6.0 - 0 0 6.0 - 0 0 7.7 - 0 0 7.7 - 0 0 8.0 - 0 0 9.0	MAY		ì	ı	1	ı	1 1	1	ı	ı	ı	ı	1 .	1 1	1	ı	ı	ı	ı	ı
Myctop	APR.	6.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	APR.		ı	1	ı	1	1 1	1	ı	1	1	1	ı	t I		ı	1	ł	ł	ı
	MAR.	0000000	MAR.		1	ı	1	ı	ł 1	1	t	ı	1	1	ı	1 1	1	1	1	ı	ı	ı
	FEB.	000000000000000000000000000000000000000	FEB.		8	ı	1	1	!	1 1	1	ı	ı	1	ı	1	1 1	ı	1		14.4	8
	JAN.	0.4000000000000000000000000000000000000	JAN.	1 -		5		ų,	0			5	2.	2.	8.0	٥٥	7.		9		t	t
	2	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	N	10		0	0.	0.	00) K		0	90.	0.	60.09		· -	000	0	47.	0.	vo.
	STATION	107.0 107.0 1107.0 1110.0 1113.0 1113.0 1117.0 117.0 117.0 117.0 117.0 117.0 117.0 117.0 117.0	STATION	10		0	0.	0	0.0	ى د	, c	3	3	3	47.0	- 1	-	7	7	0	0	0

DEC. NOV 007700 0000011000000 OCT 10000010000001 SEP. Protomyctophum crockeri (cont.) JULY 9001 MAY MAR FEB. 0000080000000 1000000000172 120.0 120.0 120.0 100.0 100.0 12 STATION \$50.0 \$50.0 \$50.0 \$50.0 \$50.0 \$50.0 \$60.0

Protomyctophum crockeri (cont.)

DEC.	10.00 10.00 10.00 10.00 10.00 10.00
NOV.	1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
OCT.	12.5 12.6 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10
SEP.	
AUG.	1 1 2 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
JULY	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
JUNE	
MAY	00000 1 00000 1 10040 0 0 0 0 0 0 0 0 0
APR.	10.00 10
MAR.	0.0
FEB.	100.00 100.00
JAN.	8 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
Z	100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
STATION	733.0 733.0 733.0 777.0 777.0 777.0 777.0 777.0 880.0 880.0 881.0 881.0 881.0 881.0 881.0 881.0 881.0 881.0 881.0 881.0

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		844488889696999999999999999999999999999	
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tophum	MAY	0.0	MAY	Symbolophorus APE. MAX
Protomyctophum crockeri	APR.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	APR.	Symbol APE.
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Symbolophorus californiensis (cont.)

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JUNE	20170128211240111240201120	JUNE	
MAY	3.0 6.5 6.0 3.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	MAY	
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MAR.	1111111111111110000	MAR.	
FEB.		FEB.	2.6
JAN.	000000000000000000000000000000000000000	JAN.	20.6 20.6 10.6 10.6 113.7 113.7 113.7 113.3 113.3 113.3 113.3 113.3 113.3 113.3 113.3 113.3 113.3 113.3 113.3 113.3 113.3 113.3
N	880.00 870.00 870.00 870.00 870.00 870.00 870.00 870.00 870.00 870.00	N(38 0 50 0 60 0 60 0 90 0 70 0 70 0 100 0 80 0 80 0 80 0 80 0 80 0 80 0
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	DEC.	11.22 0000 0000 0000 0000 0000 0000 0000	DEC.	0.0	DEC.	0000
	NOV.		NOV.	0.0	NOV.	0000001111
	OCT.	111000000000000000000000000000000000000	OCT.	0.0	OCT.	000000000
	SEP.	0000	SEP.		SEP.	0.00
•	AUG.		AUG.		AUG.	000000
(cont.)	JULY		JULY	0.0	JULY	000000000000000000000000000000000000000
luctus	JUNE	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	JUNE	2.7 0.0 uridae	JUNE	0.00
us prod	MAY		MAY	- 2.7 - 0.0 Macrourida	MAY	00000000
Merluccius productus	APR.	0.0000000000000000000000000000000000000	APR.	2.8	APR.	0.00
W	MAR.	40.4 171.5 133.2 133.2 133.2 134.3 10.1 10.1 10.1 17.0 10.1 17.0 17.0 17.0 17.2 17.2 17.2 17.2 17.2 17.2 17.2 17.2 17.2 17.2 17.3 1	MAR.	0.0	MAR.	1 1 1 1 1 1 1 1 1 1 1 1
	FEB.		FEB.		FEB.	300000000000000000000000000000000000000
	JAN.	11111111111111	JAN.	1 1 1 1	JAN.	000000000000000000000000000000000000000
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TABLE 4. (cont.)

	DEC.	0.0		DEC.		
	NOV.	1 1		NOV.		
	OCT.	0.0		OCT.	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
	SEP.	0.0		SEP.	34.70 3.00	
	AUG.	1.1		AUG.		
t.)	JULY	0.0		JULY	4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
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	MAR.	! !		MAR.	0000000	
	FEB.	3.6		FEB.		
	JAN.	0.0		JAN.		
		50.0 39.0			222	
	STATION	113.0		STATION	600 600 600 600 600 600 600 600	

TABLE 4. (cont.)

	DEC.	0.0	1	DEC.	
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	MAR.	0.0		HAR.	HAR. 111111111111111111111111111111111111
	FEB.			FEB.	FEBS 1
	JAN.			JAN.	1 AN
	Z	23.0		N	0.000
	STATION	137.0		STATION	\$60.0 \$60.0 \$63.0 \$63.0 \$73.0 \$100.0

	DEC.	1111000000000000000000	DEC.	2.4	DEC.	000000
	NOV.	00000000000000000000000000000000000000	NOV.	1.7	NOV.	0.00
	OCT.	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	OCT.	1 1	OCT.	0.0000000000000000000000000000000000000
	SEP.	22.1 20.0 1.7 20.0 20.0 22.4 3.1 1.9	SEP.	0.0	SEP.	10.0 11.0 14.7 3.5
	AUG.	39912	AUG.	1 1	AUG.	000000000000000000000000000000000000000
sae	JULY	P	JULY	0.0	JULY	0.000000
scrippsae	JUNE		JUNE	- 0.0 - 0.0 Ceratioidei	JUNE	000000
Ophidion	MAY	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	MAY	Ceral	MAY	0.00
0	APR.	00000000000000000000	APR.	0.0	APR.	00000000
	MAR.	000000	MAR.	0.0	MAR.	11111111
	FEB.	000000000000000000000000000000000000000	FEB.	1 1	FEB.	0 000000
	JAN.	000000000000000000000000000000000000000	JAN.	0.0	JAN.	00000000
	Z	222386.00 222386.00 22238.00 22238.00 22238.00 22238.00 22238.00	Z	40.0	2	2000 2000 2000 2000 2000 2000 2000 200
	STATION	82.0 83.0 83.0 83.0 83.0 87.0 97.0 97.0 1117.0 1118.0 1120.0 1120.0 1130.0 133.0	STATION	120.0	STATION	80.0 83.0 100.0 100.0 100.0

TABLE 4. (cont.)

	DEC.	000000000000000000000000000000000000000	DEC.	0.0		DEC.	0000		DEC.	1111111
	NOV.	0600000	NOV.	ì		MOV.	0.00		NOV.	00,00000
	OCT.	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	OCT.	0.0		OCT.	0.0		OCT.	0.00000
	SEP.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	SEP.	0.0		SEP.	3.4		SEP.	1111111
	AUG.	11111111111	AUG.	-		AUG.	1111		AUG.	0000000
nt.)	JULY	MOOOOOOOOOOOO	JULY	2.8		JULY	0.00	E L	JULY	000000000000000000000000000000000000000
dei (cont.	JUNE	Gobiesocidae	JUNE	0.0	Exocoetidae	JUNE	0.0 0.0 21.6 0.0	is sair	JUNE	111111
Ceratioidei	MAY	Gobie	MAY	1	Exocc	MAY	I	Cololab	MAY	4 K 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Ce	APR.	000000000000000000000000000000000000000	APR.	0.0		APR.	0000		APR.	1
	MAR.	000000	MAR.	1		MAR.	0000		MAR.	1111111
	FED.	000000000000000000000000000000000000000	FEB.	0.0		FEB.	0.0		FEB.	0000000
	JAN.	000000000000000000000000000000000000000	JAN.	0.0		JAN.	0000		JAN.	00000001
	N	55 70 70 70 70 70 70 70 70 70 70 70 70 70	Z	29.0		Z	40.0 40.0 50.0 60.0		z	60.0 65.0 80.0 50.0 70.0
	STATION	103.0 103.0 103.0 107.0 1107.0 1113.0 1123.0 1123.0 1130.0	STATION	97.0		STATION	110.0 120.0 120.0 127.0		STATION	60.0 60.0 60.0 70.0 70.0 70.0

TABLE 4. (cont.)

	DEC.	1111001000000000000000		DEC.	11000		DEC.	1 1 1 1 1 1 1 .
	NOV.	000000000000000000000000000000000000000		NOV.	0.00		NOV.	000000
	OCT.	momooooooooooooooooooooooooooooooooooo		OCT.	00000		OCT.	000000
	SEP.	000000000000000000000000000000000000000		SEP.	0.0		SEP.	111111
	AUG.	0000		AUG.	0.0		AUG.	000000
(cont.)	מתר			JULY	0.0	ae	JULY	000000
saira (JUNE	1	rinidae	JUNE	0.0	Trachipterida	JUNE	111111
Cololabis s	MAY	000000000000000000000000000000000000000	Ather	MAY	7.9 0.0 10.9	Trachi	MAY	0.0000
Colo	APR.			APR.	0000		APR.	111111
	MAR.	, , , , , , , , , , , , , , , , , , , ,		MAR.	0.0		MAR.	11111
	FEB.			FEB.	0.00		FEB.	5.9 3.2 0.0 1.5 0.0
	JAN.			JAN.	0000		JAN.	0 m m 0 m m
	Z	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0		N	48.0 48.0 27.0 31.0 25.0		NO	60.0 60.0 80.0 52.0 55.0 60.0
	STATION	73.0 73.0 83.0 87.0 87.0 87.0 90.0 90.0 90.0 90.0 100.0 100.0 100.0 110.0		STATION	67.0 77.0 93.0 107.0		STATIC	53.0 60.0 63.0 63.0 63.0

	DEC.	
	NOV.	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
	OCT.	
	SEP.	
	AUG.	000000000000000000000000000000000000000
(cont.)	JULY	000000100000000000000000000000000000000
	JUNE	90000000
Trachipteridae	MAY	01000000000000000000000000000000000000
Trac	APR.	
	MAR.	
	FEB.	
	JAN.	
		0.000000000000000000000000000000000000
	STATION	67.0 70.0 70.0 70.0 70.0 70.0 70.0 70.0

TABLE 4. (cont.)

	DEC.	00000001		DEC.	00.00	DEC.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	NOV.	0.0		NOV.	0.0	NOV.	0.00
	OCT.	00000000		OCT.	00000	OCT.	0.00
	SEP.	000000000000000000000000000000000000000		SEP.	33.4	SEP.	
	AUG.	1111111	1	AUG.	0.01111	AUG.	0.00
ont.)	יחני	00000000	ae	JULY	0.00	JULY	0.
Trachipteridae (cont.)	JUNE	000000000000000000000000000000000000000	Eutaeniophoridae	JUNE	0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0	JUNE	
chipter	MAY		Eutaeni	MAY	0.0 - - Melamp	MAY	0.0
Tra	APR.	00000000		APR.	11000	APR.	
	MAR.	0.00		MAR.	0.0	MAR.	
	FEB.	0000000		FEB.	0.001	FEB.	12.3 2.2 2.3 2.3 2.3 2.3 2.3 2.3
	JAN.	00000000000000000000000000000000000000		JAN.	00001	JAN.	22.8 22.33 23.6 10.3.4 10.3.6 10.6 10.6
		55.0 332.0 332.0 50.0 50.0 50.0		2	20.0 70.0 80.0 35.0	Z	55.0 55.0 60.0 60.0 70.0 100.0 120.0 120.0 120.0 120.0 120.0 120.0
	STATION	003.0 07.0 07.0 07.0 10.0		STATION	60.0 90.0 107.0 110.0	STATION	60.00 60

	DEC.		
	NOV.		
	ocT.		
	SEP.		
	AUG.	0004000460 0000 000000000 0000000000000	
cont.)	JULY	0.00000 8000000 00000 0000000 0000000 000000	
spp. (cont.	JUNE		
Melamphaes	MAY	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
Mela	APR.	10000000000000000000000000000000000000	
	MAR.		
	FEB.	000000000000000000000000000000000000000	
	JAN.	2 000000000000000000000000000000000000	
		65.0 120.0 65.0 70.0 70.0 70.0 70.0 70.0 70.0 70.0 80.0	
	STATION	6000 6000	

	DEC.	0000 01100 01111100 0000 0000 0000 000
	T. NOV	
	SEP. OCT	
	AUG.	0000
(cont.)	JULY	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
spp.	JUNE	
Melamphaes	MAY	004000 0010 00 4287 200000000000000000000000000000000000
Me	APR.	00000000000000000000000000000000000000
	3. MAR	
	JAN. FEB	
	37	000000000000000000000000000000000000000
	STATION	883.0 883.0 883.0 883.0 883.0 883.0 883.0 887.0 900.0 90

	DEC.	
	NOV.	0000 0 000 0000 0000 0000 0000 0000 0000
	OCT.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	SEP.	11. 11. 12. 12. 13. 14. 15. 16. 17. 18. 19. 19. 10. 10. 10. 10. 10. 10. 10. 10
	AUG.	
(cont.)	JULY	44404L00040000000000000000000000000000
spp.	JUNE	
Melamphaes	MAY	
Mela	APR.	
	MAR.	
	FEB.	000000mm00000m000000000000000000000000
	JAN.	000m00000400000000000000000000000000000
	TATION	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	STAT	100 100 100 100 100 100 100 100 100 100

	DEC.	1		•		ı	c 1 C		ı	ı	ı	ı		DEC	3	ı	i	ı	i	ı	í	I	ı	L		0.0			0				٠			9	0	0.0	9		ł
	NOV.	1	e	0	000	٠	0		0			٠		NOV		0.0									ı	1	l	ı	1	! !	1	ŀ	ŧ	ł	ı		0	0.0			0
	OCT.	1		0	700			٠						1	3									0.0								0					ł	ŀ		0.0	
	SEP.		ı	ı		i	1	I	I	ı	ı	i		CFD	orr.	i	1	ı	ı	ı	ı	ı		2.9		0.0	1 1			0					0			0.0		ı	ı
	AUG.		1) I	ı	ı	ı	ı	i	i	ı		ATIC	2000			0.0						i	i	ſ	1	1 1	l	ı	l	i	ı	ı	ı	i	1	ı	ı	ı	1
(cont.)	JULY		0	0	•									THE	1000													0		0								0.0			
spp. (c	JUNE	1	0	0	0.0	0	0	0					Poromitra spp	TIME	JONE	ı	ı	ı	1	ı	1	ı	i	ı	ı	ŀ	1		0	0	0					- 6		0.0			
Melamphaes	MAY		Į	1	1 1		ŀ	î	ŧ	ı	1	1	Poromi	MAN	MAI			0.0								3.0	ı	1	ı	į	ı	ı	ı	i	ı	ı	1	ı	ı	ļ	1
Melä	APR.	1	6	8		0								da.k	APR.	ı	ı	ı	ŀ	ł				-			0		0		0					8		3.0		- 4	
			0	0	ب 4 د		0							1 6	MAK.	1	ı	1	i	1	i	i	ı	i	ı	ı	ł	ı	1	ł	ı	ı	ł	ı	ł	ı	1		. 0	0.0	
	FEB.				1 1	ı	ı	į	ı	1	ı	ı			reb.									0 ° 0		0.0	ı	ı		0	8					0.0	0	1	t	ŀ	B.
	JAN.		1 1			ı	i	١	ı	ı	ı	ı			JAN.									0.0					0									0.0	1	ı	ı
	2	1	Э и	o c	40.0	0	٠ 0	5	0	0	0	0			Z,	0	3	0	0	0	0.	0	0	80.	0	80.	o c	707	·	. 0	0	0	0	0	0	5.	0	50.0	0	0	0
	STATION	1 0	. / 7	200	130.0	30.	30.	33.	33.	33.	37.	37.		OTHER BO	STATION	7.	ب	3	3	7.	7.	0	0	7.0	0.0	3°0	0.0	200	700	00.	03.	07.	07.	10.	10.	13.	17.	120.0	20.	27.	33.

Scopeloberyx robustus

					-	34 402						
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
0.06 0.06	0.0	0.0	-	0.0	0.0	1	0.0	1	0.0	3.2	ı	2.9
				Scop	Scopelogadus		bispinosus					
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
100	1	1			1		1			1	1	
3.0			1 1	1 1	9 6	1		00	ı	000	00	ı
7.0 90.	1 1		ı	0.0		1		0.0	ì			i
0.0 70.			ŀ	0.0		1		0.0	ı			1
83.0 90.0	0.0	0.0	ı	0.0	0.0	ł	0.0	0.0	1 9	0.0		10
0.0 80.	0	0	1	0.0	0	i 1		1 1				0 1
120.		1 1	1 1	3.1	1	1		1	1	0 6	į	ì
3.0 140.	0	1	ı	10.6	!	1		ı	ı		1	i
00.0 80.			i	0.0	ļ	- 0		ı	0.0		1	
07.0 55.	0.0	0.0	1	0.0	ı	- 6		1	0.0		ł	
07.0 60.			ı	0.0	ı	0		ŀ	0.0		ì	
07.0 70.	0	0	ļ	0.0	ı			ı	0.0		١	0
10.0 80.	0	0	ı	000	ł i	0		1 (0.0	0		0
3.0 60.	1 1			000	1 1	0.0		1		1	00	0.0
33.0 60.	1	ļ	0.0	0.0	i			8	ŀ	0.0	0	
				Macr	Macroramphosus	sus graci	cilis					
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
03.0 45.				0.0		0		l l	0		ı	
07.0 60.			l	0.0	1	0	0	1	0	0	1	
07.0 70.	0	0.0	1	0.0	l	0		1 1		0.0	1 1	0
10.0		0	i l	000	1 1	0	0		0	0 1	a a	0 (
13.0 60.	0 0	0 0	1	0.0	1	0 6	0 8	ī	0 0	0	1	
17.0 60.				0.0	ı		0	1	- 0			
120.0 60.0	0.0	L	0.0	0.0	1	0.0	3.2	1 1	0.0	1 1	0.0	0.0
20.0 /0.	0	m_0		0.0	I		0	l	0			
					Syngnathus	thus spp	· c					
STATION	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
63.0 60.0 70.0 51.0 70.0 75.0	0010	0000	1111		0000	1 1 1 1	0010	0000	1 1 1 1	0.0	0 0 0 0	1 1 1 1
1.0 01.		0			0		0				0	

TABLE 4. (cont.)

	DEC.	0000		DEC.	00.00		DEC.	00000
	NOV.	0.01111		NOV.	00000011		NOV.	000000000
	OCT.	00000		OCT.	0000000		ocr.	000000000000000000000000000000000000000
	SEP.	2000		SEP.	0.00		SEP.	00000
	AUG.	0.01111		AUG.	7 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		AUG.	111110000000000000000000000000000000000
(cont.)	JULY	0.00		JULY	00000000		JULY	100.00 0.00 0.00 0.00 0.00 0.00 0.00 0.
spp. (c	JUNE	0.000	gonidae	JUNE	0.0	Cottidae	JUNE	11:11:11:11:11:11:11:11:11:11:11:11:11:
Syngnathus	MAY	0.0	Ago	MAY	0000000	Cot	MAY	110000000000000000000000000000000000000
Syng	APR.	0.0 3.1 0.0		APR.	0.0000000000000000000000000000000000000		APR.	0000,000
	MAR.	1 1 1 1		MAR.	111111		MAR.	
	FEB.	0.00		FEB.	0.00 4 6 0.00		FEB.	112.8 112.8 13.2 13.2 13.2 10.0 10.0 10.0 10.0
	JAN.	00000		JAN.	050000000000000000000000000000000000000		JAN.	0.0000000000000000000000000000000000000
		43.0 29.0 40.0 29.0			52.0 551.0 51.0 443.0 550.0			880 880 880 880 880 880 880 880
	STATION	83.0 97.0 100.0 103.0		STATION	60.0 73.0 80.0 83.0 83.0		STATION	444 447.0 577.0 573.0 660.0 663.0 677.0 773.0 773.0 993.0

	DEC.	000000	1	DEC.	0000	DEC.	11111111
	NOV.	1111000		NOV.	000000000000000000000000000000000000000	NOV.	00000
	OCT.	0000111		OCT.	000000000000000000000000000000000000000	OCT.	000000
	SEP.	000000		SEP.	0000	SEP.	
	AUG.	111111		AUG.	000000000000000000000000000000000000000	AUG.	000000
•	JULY	0.0 4.3 2.9 1.7 10.7 0.0	marmoratus	JULY		JULY	0.0000.
Cottidae (cont.	JUNE	0000008	nys marn	JUNE	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	JUNE	 - - - -
Cottida	MAY		Scorpaenichthys	MAY	Cyclol	MAY	0.0000000000000000000000000000000000000
	APR.	10.8 3.2 1.7 1.8 0.0	Scorpe	APR.	00000000000000000000000000000000000000	APR.	
	MAR.	0.00		MAR.		MAR.	
	FEB.	0000111		FEB.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	FEB.	111100000
	JAN.	0000011		JAN.	0000400www00000w000w	JAH.	000000000000000000000000000000000000000
	N	29.0 29.0 30.0 31.0 40.0 36.0		2	25.00 25.00 25.00 25.00 25.00 25.00 25.00 25.00 25.00 25.00 25.00 25.00 25.00 25.00 25.00 25.00 25.00	ON	38.0 445.0 550.0 570.0 770.0 51.0
	STATION	100.0 103.0 103.0 120.0 123.0		STATION	60.0 60.0 60.0 63.0 63.0 63.0 63.0 77.0 77.0 77.0 77.0 80.0 80.0 80.0	STATIO	40.0 40.0 43.0 60.0 63.0 63.0 70.0

TABLE 4. (cont.)

	DEC.	00000		DEC.	1111		DEC.	1	DEC.	000000000000000000000000000000000000000
	NOV.	00011111		NOV.	0000		HOV.	0.0	NOV.	000000000000000000000000000000000000000
	OCT.	000000	1	OCT.	00000		ocr.	0.0	OCT.	000000000000000000000000000000000000000
	SEP.	00000		SEP.	1 1 1 1 1		SEP.	ł	SEP.	0000000
	AUG.	0.00		AUG.	00000		AUG.	0.0	AUG.	000000000
ont.)	JULY	0.0 0.0 0.0 0.0 0.0	0)	JULY	00000	sn	JULY	0.0	JULY	0.0000000000000000000000000000000000000
dae (co	JUNE	1 1 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Hexagrammidae	JUNE	1111	elongatus	JUNE	s pictus	10	0.0000.0000.000000000000000000000000000
Cyclopteridae (cont.	MAY	0.00	Некадг	MAY	00000	Ophiodon	MAY	0.0 Oxulebius	MAY	0000000000011111
Cyc	APR.	0.0 0.0 1.7 1.3 1.6		APR.		Op	APR.	0	APR.	0.0000000000000000000000000000000000000
	MAR.	1 1 1 1 1 1 1		MAR.	1111		MAR.	ì	MAR.	0.0000
	FEB.	0.00		FEB.	70.1		FEB.	2.9	FEB.	0.00
	JAN.	000000		JAN.	0.0 1.7 0.0 0.0		JAN.	0.0	JAN.	400000000000000000000000000000000000000
		48.0 29.0 29.0 30.0 31.0		l l	50.0 50.0 65.0 48.0			0.09		250.0 250.0 250.0 251.0 252.0 25
	STATION	77.0 83.0 100.0 103.0 103.0 1107.0		STATION	60.0 63.0 63.0 77.0		STATION	60.09	STATION	63.0 67.0 73.0 77.0 80.0 80.0 83.0 83.0 83.0 83.0 97.0 97.0

1 	DEC.	1 1 1 1 1 6	0000m	9000		DEC.	000						DEC.	l :	1	t	ı	l I	ł	1	I
	NOV.	0.0000	1111	0.0		NOV.	111	l l		0 0	000		NOV.	ı	1	1	1	1 1	1	i	i
	OCT.	00000				OCT.	0.00				0.0	1	OCT.	ł	l I	1	ŀ	l i	1	ı	1
	SEP.		00000			SEP.	17.4				1 1		SEP.	ı	1 1	ı	١	1	1	ı	ı
	AUG.	00000	1 1 1 1 1	1 1 1 1		AUG.	1 1 1	1-1	1 1		111		AUG.	ı		1	ı	1	il	1	ı
• 0	JULY	00000			•	JULY	0.0			000			JULY	ı	l f	í	ı	1	1 1	1	I
pis spp.	JUNE		4	0000	ena spp	JUNE	000	0 0				es spp	JUNE	1	1 1	ı	1	I	1 1	ı	1
Zaniolepis	MAY	00000		1111	Scorpaena	MAY	111	1-1	LI	1 1	1 1 1	Sebastes	MAY	1	1 (1	ļ	1	1 1	1	ı
	APR.		0000			APR.	000	0 0					APR.		l I	1	1	ı	1 1	1	ı
	MAR.		1111	0.0		MAR.		1-1		0 0	000		MAR.		I	} }	1	ı		ı	ı
	FEB.	00000				FEB.	0000			1 1	1 1 1		FEB.		ı	1 1	1	ı	1 (ı	ı
	JAN.	40000				JAN.	0000							3.	53.	70	4	7	53.5	n 00	9
		50.0 52.0 50.0 43.0	0.70	0.004.0		7.	000	200	0.0	0.2	45.0 40.0 50.0		2	1 &	0	0 C	200	0	70.0	0 0	5:
	STATION	63.0	987.	00000		STATION	03.	17.	18.	20.	127.0 130.0 133.0		STATION	0.	0.	50	0	0.	40.0		. n

	DEC.	ı	ı	ı	ı	i	1	ł	ł	ı	ı	1	į	ł	ı	i	i	1	ı	ı	ı	ı	ı	ı	ı	ı	í	ı	ł	ı	1	ł	i		1 1	- 1	į		ı	ı	ł	ı	ı	ı	1	ı
	NOV.	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	1	1	ı	ı	ı	ı	ì	ı	ı	ı	i	ı	ı	ı	ı	ı	ı	i		0													0		0.0
	ocr.	ı	i	ı	1	ı	i	1	i	ı	ı	i	ı	ı	ı	i	ı	1	ı	ı	ı	ł	t	ı	ļ	ı	ı	ı					0			9				, , ,	9		0			3.9
	SEP.	1	ı	ı	i	ı	ł	ı	ı	ı	ı	ı	ı	ŧ	ł	ı	ı	ı	ı	1	ı	ı	1	ı	t	i	ı	ı	ı	t	ı	ı	ı	ı	1 1	1	1	ł I		. 1	ı	ı	1	1	ı	i
	AUG.	1	ı	i	l	ŀ	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	I	1	ı	i	1	ı	ı	ı	ı	ı	1			S)		7 .	•	· v		0			. a		, r	: 6		29.4
ont.)	JULY	ı	ı	ı	ı	١	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	1	1	ı	ı	ı	ı	ı	ı	ı	ı	ł	ı				62.6	٠ 0		4.0		0	9 0	, ,	•	•		• •	0.0	0	17.0
pp. (cc	JUNE	ı	ı	ı	ı	i	ı	ı	ı	ı	ı	i	ı	i	ı	ı	ı	ı	ı	ı	i	ı	í	ı	ı	ı	i	ı	1	1	1	1	ı	ı	1		}	1		۱ ۱			: 1	. 1	i	ı
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Sebastes s	MAY	10000000000000000000000000000000000000
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	MAR.	
	FEB.	8833.7 163.3 184.5 163.4 163.4 172.3 184.5 185.0 1
	JAN.	231.3 231.3 231.3 231.3 231.3 231.3 231.3 231.3 233.3 233.3 258.3 259.3
	Z	0.00 0.00
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	JAN.	11111111111111111111111111111111111111
	ON	298000000000000000000000000000000000000
	STATI	88888888888888888888888888888888888888

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(cont.)	JULY	E000004487744000000000000000000000000000
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		146. 5.3.2. 5.3.3. 5.3.3. 5.3.3. 6.0. 1.3.2. 1.3.2. 1.3.2. 1.3.2. 1.3.2. 1.3.2. 1.3.2. 1.3.3. 1.
	EB. MAR.	52.6
	AN. FEB. MAR.	79.4 152.6

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ont.)	JULY	spp.	JULY	
spp. (cont.	JUNE		JUNE	
Sebastes	MAY		MAY	7.000 0.00 4.000 0.00 0.00 0.00 0.00
Sel	APR.	12.6 12.6 12.6 12.6 12.6 12.6 14.7 14.6 15.6 16.0 17.6 18.6 18.6 19.6	APR.	30.44
	MAR.		MAR.	
	FEB.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	FEB.	0.0000000000000000000000000000000000000
	JAN.	00000001111111111111111	JAN.	000000000000000000000000000000000000000
	Z	0.000000000000000000000000000000000000	N	65.0 865.0 55.0 65.0 665.0 70.0 70.0 55.0 65.0 70.0 65.0
	STATION	1119 1119 1120 1120 1120 1120 1120 1120	STATION	60.0 60.0 67.0 67.0 77.0 77.0 880.0

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	SEP.	000000000000000000000000000000000000000	SEP.	0000000
	AUG.	000000	AUG.	111111111111
(cont.)	JULY	00 m 0 0 0 1 m m 0 0 0 0 m m 0 m 0 4 4 0 4 0 0 0 0 0	JULY	000004000000
spp.	JUNE		JUNE	000000000000000000000000000000000000000
Sebastolobus	MAY	3.7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	MAY	
Sebas	APR.	0.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	APR.	000000000000000000000000000000000000000
	MAR.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	MAR.	0000000
	FEB.	100000 10000000000000000000000000000000	FEB.	000000
	JAN.		JAN.	0000000
	17	4 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7	229.0 224.0 224.0 225.0 228.0 225.0 225.0 23.0
	STATION	883.0 883.0 883.0 883.0 883.0 887.0 990.0 990.0 991.0 991.0	STATION	113.0 117.0 118.0 120.0 120.0 130.0 133.0 133.0 133.0

	DEC.	0.0		DEC.	
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	OCT.	0000		OCT.	0.000000000000000000000000000000000000
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	AUG.	0.00		AUG.	0.0000
	JULY	0000	spp.	JULY	1 1 2 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Blennioidei	JUNE	1111	i	JUNE	
Blenr	MAY	00.00	Hypsoblennius	MAY	000000000000000000000000000000000000000
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(cont.)	JULY	200		JULY							8													0 0		2.1		JULY	2.8
s spp.	JUNE	0.0	Clinidae	JUNE	1 1	1	ł J	ı	1 1		1	í	ı	1 1	ı	1		4		- 6			0			30.0	Gobiidae	JUNE	111
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e (cont.	JUNE		
Gobiidae	MAY		
	APR.	1 1 1 1 1 1 1 1 1 1	
	MAR.	0.0.11111	
	FEB.	000004480040000000010040000010000000000	
	JAN.		
	Z	0.000 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0	
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	DEC.	000000000000000000000000000000000000000	
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L.)	JULY	### 10000000000000000000000000000000000	0.0
ae (cont.	JUNE	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	
Gobiidae	MAY	100 100	0.0
	APR.	10000000000000000000000000000000000000	1
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	FEB.	000000000000000000000000000000000000000	
	JAN.	000000000000000000000000000000000000000	0.0
	NC	29 29 29 29 29 29 29 29 29 29 29 29 29 2	55.0
	STATION	97.0 97.0 97.0 97.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 110.0 1113.0 1113.0 1113.0 1113.0 1113.0 1113.0 1113.0 1113.0 1120.0 1120.0 1120.0 1120.0	60.09

	DEC.		DEC.	0.000
	NOV.	0.000 0.00 0	NOV.	000000000000000000000000000000000000000
	OCT.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	OCT.	0.00
	SEP.	7.22 7.20 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.3	SEP.	13.2 0.0
	AUG.		AUG.	3.3 3.3 3.5 3.5 3.6 4.0 0.0 22.1 22.1 23.3
op.	JULY	nica	JULY	25.0 0.0 0.0 0.0 25.8 0.0 0.0 0.0 0.0 0.0
Halichoeres spp	JUNE		JUNE	
Halichc	MAY	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	MAY	000000000000000000000000000000000000000
ì	APR.		APR.	000000000000000000000000000000000000000
	MAR.	000000000	MAR.	111111111111
	FEB.	000000000000000000000000000000000000000	FEB.	
	JAN.	000000000000000000000000000000000000000	JAN.	000000000000000000000000000000000000000
	N	22 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	ON	80.0 51.0 660.0 65.0 65.0 70.0 70.0 70.0 80.0 60.0
	STATION	87.0 87.0 97.0 110.0 1113.0 1117.0 1120.0 120.0 120.0 120.0 120.0 120.0 120.0 120.0 120.0 120.0	STATIO	70.0 777.0 777.0 777.0 880.0 880.0 883.0 883.0 883.0 883.0

TABLE 4. (cont.)

	DEC.	000000000000000000000000000000000000000	DEC.	0000000		DEC.	1-1
	NOV.	0.00	NOV.	11111000		NOV.	0.0
	OCT.		OCT.	0.0000000000000000000000000000000000000		OCT.	0.0
	SEP.	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	SEP.	0.0000000000000000000000000000000000000		SEP.	1-1
•	AUG.		AUG.			AUG.	2.7
(cont.	JULY	666 133.0 144.0 177.2 18.0 19.0 10.0	pulcher E JULY	000000000000000000000000000000000000000	nis	JULY	48.3
californica	JUNE			400000 00000 00000	punctipinni	JUNE	1 1
	MAY	00000004	Semicossypnus R. MAY JU	1 10	Chromis pu	MAY	0.0
Oxyjulis	APR.		Sem APR.	0000000	Chi	APR.	0.0
	MAR.	0.0	MAR.	0000		MAR.	11
	FEB.		FEB.	00000		FEB.	0.0
	JAN.	000000000000000000000000000000000000000	JAN.	00000011		JAN.	0.0
	Z	0.000 4 4 0.00 0.00 0.00 0.00 0.00 0.00	2	32.0 35.0 35.0 42.0 45.0		Z	47.0
	STATION	90.0 93.0 93.0 93.0 93.0 97.0 97.0 100.0 100.0 103.0 103.0 107.0 113.0	STATION	90.0 100.0 113.0 117.0 123.0 123.0		STATION	82.0

				Chromis	- i	punctipinnis	(cont.	()				
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i	JULY	0000	JULY	000000000000000000000000000000000000000	0000	JULY	1.2 6.6 0.0	JULY	3.5 6.8 7.0 78.5 53.6 100.4 13.2
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	MAR.	1111	MAR.		3.7	MAR.	0.00	MAR.	000000
	FEB.	0.0	FEB.	00000	•	FEB.	1 1 1	FEB.	000
	JAN.	0.00	JAN.	%0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	• #	JAN.	1 1 1	JAN.	000
	Z	90.0 140.0 60.0	N	120.0 120.0 140.0 70.0 70.0 80.0	0520	7	25.0 22.0 23.0		445.0 50.0 60.0 60.0 60.0 60.0
	STATION	80.0 90.0 113.0	STATION	990.0 933.0 100.0 1100.0 1100.0	23.	STATION	133.0 137.0 137.0	STATION	117.0 117.0 120.0 123.0 123.0 127.0

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	FEB.		0	0		2	0	9	7	0						•			0			• •			0					i	ł	ı	I	1 1	l I	1 1	1	1	i
	JAN.							. 0									0		0						0.0	٠							0.0	0		1	I	1	1
	ON	.09	70.	80.	35.	40.	45.	50.	55.	.09	70.	80.	32.	35.	40.	45	200	200	.00	35.	, C	45.	50.	80.	32.0	. A .	200	70.	80.	45	50.	22	000	00		60.	60.	30.	An
	STATION	03.	03.	03.	07.	07.	07.	07.	07.	07.	07.	07.	10.	10.	10.	10.	10°	01	01	7	, ,	13.	13.	13.	117.0		17.	17.	17.	20.	20.	20.	20.2	200	200	25	27.	30.	30

1	DEC.	3.2		DEC.	0000		DEC.	0000		DEC.	000000	1	DEC.	110000000
	1:0V.	ı		MOV.	0.00		NOV.	0.0		NOV.	0.0111111		NOV.	00
	OCT.	0.0		OCT.	00.00		OCT.	0.0		ocr.	0000000		OCT.	000000000
	SEP.	0.0		SEP.	2000		SEP.	0000		SEP.	000000		SEP.	0000000
	AUG.	ı		AUG.	1 1 1 1		AUG.	1111		AUG.	0.011111		AUG.	0.00
sn.	JULY	0.0		JULY	0.00 0.00 0.00		3077	0.44.0 0.04.0	15	JULY	3.3 0.0 6.5 2.8 17.5 4.6	ensis	JULY	wwwwwww.0w
hippurus	JUNE	0.0	eidae	JUNE	0000	lidae	JUNE	0000	nigricans	JUNE	00000	iforniensis	JUNE	0.00
Coryphaena	MAX	l	Gerre	MAY	111	Haemu	нах	1 1 1 1	Girella n	MAY	0.00 0.00 0.01	una cal	HAY	0000001111
Cor	APR.	0.0		APR.	0000		APR.	0000	Gi	APR.	000000	Medialuna	APR.	000000000
	MAR.			MAR.	0.00		MAR.	0.0		MAR.	111111		MAR.	111111111
	FEB.	0.0		FEB.	0.0		FEB.	0.0		FEB.	000000		FEB.	0 00000 00
	JAN.	0.0		JAN.	0.0		JAN.	0.00		JAN.	000000		JAN.	000000000
	NOI	0 32.0		ION	0 32.0 0 35.0 0 35.0		TON	0 33.0 0 40.0 40.0		ION	0 38.0 0 28.0 0 29.0 0 30.0 0 32.0		ION	0 447.0 0 447.0 0 50.0 0 28.0 0 38.0 0 35.0 0 35.0
	STATION	97.		STATION	97. 123. 127.		STATI	119.		STATION	77. 87. 90. 97. 97.		STATI	87. 87. 87. 93. 97. 100.

	DEC.	0.0		DEC.	0.0		DEC.		ł	1	ı	1	1	i 1	1	ı	1	1	ı	1 1	í	1	ı	1 1	1	ł	1	1	ı	i	1 1	1	17.5	5.4	•
	NOV.	1 1		NOV. I	2.7		NOV.		1	1			20.	1.36.7						0	• E													- 1	ı
	ocT.	0.0		OCT.	2.0		OCT.		ı	0			2.0	. U.				2.															0 0	0.0	
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(cont.)	AUG.	1 1		AUG.	1 1		AUG.		. 1	0.0				000	0 6	0 0					0.0													1	ı
	JULY	4.1	princeps	JULY	0.0		JULY		t	0.0				0																				0.0	6
californiensis	JUNE	0.0	lus prin	JUNE	0.0	aenidae	JUNE		1	1	ı	1	ı	1 1	1	ı	1	ı	ı	i i	. 1	ı	ı	l I	1	1	1	ı	ı	ı	ı) (ı	1
	MAY	1 1	Caulolatil	MAY		Scia	MAY		1	-																								0.0	
Medialuna	APR.	0.0	Cau	APR.	0.0		APR.		1	ı	I	ı	ı	1 1	1	1	ı	1	1	1 1	1	ı	1	ı	1 1	0.0								0.0	
Me	MAR.	1 1		MAR.	0.0		MAR.			ı	ı	ł	ŧ	1 1	: 1	ı	1	ı	ı	1 1	1	ı	ı	ı	1 1	ı	1	1	1	ŧ	i	1 1	i i	ı	1
	FEB.	0.0		FEB.	0.0		FEB.	1		2		7.	7 .	118.2	10	0 0		0					- 0			59.		0	1	9	0.60		, -	50.8	3.
	JAN.	0.0		JAN.	0.0		JAN.		1	8	80.		0 0		•			9		٠ د د		0		-	· c			33	.99	6		ب د	26.0	220.2	
	N	45.0		N	25.0		NO	1 0	, -	0	5	5	٠ د	٠,	4 L	0	8	0	0	٠ د		S	œ	_; ,	n c		2.	5.	7	0	٠ •	- 0		35.0	0
	STATION	110.0		STATION	117.0		STATIO	0	20	0	0	0.0	0,		, , ,	, n	7.	7.	7.		 o m	'n	7.			0	0.	0	2	۳,	ر س د	3,0	, ,	87.0	7.

1	DEC.	11
	NOV.	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0
	oc.r.	00000000014400000000000000000000000000
	SEP.	
	AUG.	
1t.)	JULY	17 30 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
lae (cont.	JUNE	40001000000000000000000000000000000000
Sciaenidae	MAY	1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
S	APR.	22 27 20 20 20 20 20 20 20 20 20 20 20 20 20
	MAR.	0.0000000000000000000000000000000000000
	FEB.	7486 110333 110333 12786 12786 1372 1073 1000
	JAN.	20000000000000000000000000000000000000
	2	22225
	STATION	997.0 907.0 907.0 907.0 907.0 907.0 907.0 907.0 907.0 907.0

	DEC.	2.5	DEC.	
	NOV.	0.0	NOV.	000000000000000000000000000000000000000
	OCT.	0.00	OCT.	20000000000000000000000000000000000000
	SEP.	1 1 1	SEP.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	AUG.	1 1 1	AUG.	000 84 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
t.)	JULY	000	JULY	22330000000000000000000000000000000000
ae (cont	JUNE	0.0 0.0 3.2 anidae	JUNE	
Sciaenid	MAY	Serr	MAY	000000000000000000000000000000000000000
S	APR.	000	APR.	1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	MAR.	000	MAR.	0000000
	FEB.	1 1 1	FEB.	
	JAN.	1 1 1	JAN.	000000000000000000000000000000000000000
	Z	22.0 23.0 40.0	Z	888344444888333555555555555555555555555
	STATION	137.0 137.0 137.0	STATION	70.0 883.0 883.0 883.0 883.0 883.0 883.0 887.0 90.0 90.0 90.0 90.0 90.0 90.0 90.0 9

TABLE 4. (cont.)

	DEC.	00 0000		DEC.	1	DEC.	0.0	DEC.	0.0	DEC.	00000000
	NOV.	0000000		NOV.	0.0	MOV.	2.3	NOV.	0.0	NOV.	0.0
	OCT.	10.32		OCT.	3.3	OCT.	0.0	OCT.	3.5	OCT.	
	SEP.	111111	1111	SEP.	1	SEP.	0.0	SEP.	0.0	SEP.	00000000
	AUG.		1111	AUG.	í	AUG.	į į	AUG.		AUG.	1111111
it.)	JULY	000000		JULY	0.0	JULY	0.0	JULY	0.0	JULY	33.3 34.4 17.5 13.7 14.1
ae (cor	JUNE	2.7 0.0 0.0 0.0 0.0		JUNE	. 0.0 Scombridae	JUNE	ι	JUNE	0.0	JUNE	0.0000
Serranidae (cont.)	MAY	11111	Gemp	MAY	Scom	MAY	, , , , , , , , , , , , , , , , , , ,	MAY		i	0001111111
S	APR.	0000000	00000	APR.	0.0	APR.	0.0	APR.	2.8	APR.	00000000
	MAR.	000000	00000	MAR.	0.0	MAR.	0.0	MAR.	0.0	MAR.	
	FEB.	1	1111	FEB.	ı	FEB.	0.0	FEB.	1 1	FEB.	00000000
	JAN.			JAN.		JAN.	0.0	JAN.	1 1	JAN.	00000000
	Z	25.0 235.0 235.0 235.0 225.0	00000	N	45.0	Z	35.0	Z	60.0	Z	288.0 228.0 330.0 332.0 435.0 50.0 50.0
	STATION	133.0 133.0	3333		130.0	STATION	130.0	STATION	123.0	STATION	90.0 93.0 97.0 97.0 97.0 1100.0 117.0

	DEC.	000000000000000000000000000000000000000	DEC.	000000000000000000000000000000000000000
	NOV.	0000000000000	NOV.	122000000000000000000000000000000000000
	OCT.	000 0000000	OCT.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
	SEP.	00000000111111111	SEP.	2.6 3.3 3.3 3.3 3.3 0.0 0.0 0.0 0.0 0.0 0.0
	AUG.		AUG.	
cont.)	JULY	10.0 10.0 10.0 10.0 10.0 10.0 12.8 13.0 0.0 0.0 0.0	JULY	0.0044
) sisu	JUNE	121.0 13.3 13.3 0.0 13.3 0.0 131.0 86.1 86.1 131.0 131.0 6.5 6.5 6.5 6.5 6.5 6.5 6.5 6.5 6.5	JUNE	2000 2000 2000 3000 3000 3000 000 000 00
chiliensi	MAY	Scomber	MAY	0000
Sarda	APR.	000000000000000000000000000000000000000	APR.	000000000000000000000000000000000000000
	MAR.	00000000000000	MAR.	0000000
	FEB.	00	FEB.	200000000000000000000000000000000000000
	JAN.	000000	JAN.	000000000000000000000000000000000000000
		833.0 866.0 866.0 860.0 86		222.0 225.0 225.0 225.0 225.0 225.0 225.0 225.0 225.0 225.0 225.0 225.0 225.0
	STATION	119.0 120.0 120.0 120.0 120.0 123.0 127.0 137.0 137.0	STATION	87.0 87.0 99.0 93.0 100.0 100.0 1118.0 1120.0 1120.0 1130.0 133.0

	. ! !	000000000000000000000000000000000000000	!	0000000000000
	DEC	0000000000000110011	DEC	0000000000000
	NOV.	17.7.1 1.7.2.1 1.0.0000000000000000000000000000000	NOV.	000
	OCT.	0.000000000000000000000000000000000000	OCT.	0000000000164
	SEP.	08000000000000000000000000000000000000	SEP.	000000000000000000000000000000000000000
	AUG.		AUG.	111111111111
au	JULY	tea	JULY	111.05 111.05 12.08 12.08 13.00 13.00 10.00
Frichiuridae	JUNE	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	JUNE	000000000000000000000000000000000000000
Tric	MAY		MAY	0000111111111
	APR.		APR.	000000000000000000000000000000000000000
	MAR.	000000000000000000000000000000000000000	MAR.	000
	FEB.	0000000011111111111	FEB.	000000000000000000000000000000000000000
	JAN.	0000000000	JAN.	0000000000111
	Z	00000000000000000000000000000000000000	Z	242.0 23.0 23.0 23.0 23.0 23.0
	STATION	110.0 1110.0 1110.0 1117.0 1117.0 1127.0 1127.0 1130.0 1131.0	STATION	87.0 90.0 90.0 93.0 97.0 97.0 100.0 117.0 117.0

### APR. APR. APR. DUNB JULY ANG. SEP. OCT. MOV. 43.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 1		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1							-				
25.00	ATI	JAN.		MAR.	APR.	MAY	JUNE	JULY	AUG.		OCT.	NOV.	DEC.
2.2 0.000 0.	0 50	1			1	-	ı	1	1	ı	1	1	١
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2.78	0 100	- 4	ı	1	ı	ı	ı	ı	ı	ı	ı	ı	ı
10.000	3.0 45.		ı	ı	1	ł	1	1	ı	i	ı	ı	ı
100 100 100 100 100 100 100 100 100 100	0 20		ŧ	ı	ı	ı	ı	ı	ı	1	ı	ı	ı
100.00	09 0		ı	1	ı	ı	t	ı	ı	1	ı	ı	ı
10.00	0010		1	1	ı	ı	ı	ı	ı	ı	ı	ı	ı
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13.3	200	٠ ،	1	ı	1	i	ı	1	1	ı	ı	i	ı
10000000000000000000000000000000000000	100	٠	1	1	ı	i	1	1	ı	ı	ı	i	1
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7.0 /0.	٠		;			ł	١	1	ı	ı	1	1
100 100 100 100 100 100 100 100 100 100	0.0	i		1	ı					ı	ı	ı	í
10 55.0 1 1 1 1 1 1 1 1 1	0.0 100.	i		1	ı	ı	1	I	1	l		ı	ı
1.0 50.0	3.0 55.	ı	- 4	ŧ	ı	ı	i	ı	1	i	ı	l	.
10 10 10 10 10 10 10 10	3.0 60.	ı		ł	ı	ŧ	ı	ı	ı	i	ı	ł	l
10 10 10 10 10 10 10 10	2 0 70	ı		ı	1	i	ı	ı	ı	ŀ	ı	ı	ł
10 10 10 10 10 10 10 10	000	ı		1	1	1	i	ı	ı	ŀ	ı	ı	1
10 10 10 10 10 10 10 10	7.0			ı	1	1	ı	1	i	1	ı	ι	ł
2.0 2.8 2.0 2.8 2.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0			ı	1	1	١	1	1	1	ı	ı	ı
52.0 2.8 9.0 0.0 <td>7.0</td> <td> </td> <td></td> <td>ı</td> <td>1</td> <td>1</td> <td>ł</td> <td>1</td> <td>1</td> <td>1</td> <td>ı</td> <td>1</td> <td>ı</td>	7.0			ı	1	1	ł	1	1	1	ı	1	ı
55.0 25.8 0.0 </td <td>0.0</td> <td></td> <td></td> <td>í</td> <td>i</td> <td></td> <td>ı</td> <td></td> <td></td> <td>ı</td> <td>0.0</td> <td>0.0</td> <td>ì</td>	0.0			í	i		ı			ı	0.0	0.0	ì
10 10 10 10 10 10 10 10	0.0			ı	ı		1			ı			1
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6.3 2.0 - 0.0 - 4.9 5.6 - 0.0	000			ı	t		1			ı			I
3.0 55.0 6.4 8.2	3.0			ı	ŀ		i			į			ł
3.0 50.0 6.4 8.2 0.0 <td>0.0</td> <td></td> <td></td> <td>1</td> <td>ı</td> <td></td> <td>ı</td> <td>1</td> <td></td> <td>1</td> <td></td> <td></td> <td>ı</td>	0.0			1	ı		ı	1		1			ı
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3.0 52.0 6.4 8.2 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 <td< td=""><td>0.0</td><td></td><td></td><td>. 1</td><td>ı</td><td>9</td><td>1</td><td>В</td><td></td><td>1</td><td>- 4</td><td>- 4</td><td>ŀ</td></td<>	0.0			. 1	ı	9	1	В		1	- 4	- 4	ŀ
3.0 55.0 13.2 0.0 - 7.2 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0	3.0			1 1		8	1		0 (1			ě
3.0 18.3 3.0 - - 0.0 - 4.5 0.0 - 0.0	3.0 52.				ı	•	-			1			j
3.0 70.0 6.6 0.0 0 0.0 0 0.0 0.0 0.0 0.0 0.0	0.0	o c		ı	1	0 1	-1) (0	1	- 4		ı
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7.0 60.0 0.0 13.7 - 3.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	.00 0.7		÷ (ı	١.,	0	1	•		1		- 4	1
7.0 65.0 8.9 5.0 - 7.5 - 0.0 8.6 - 0.0 0.0 13.7 - 0.0 0.0 0.0 13.7 - 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	7.0 55.			ı	I			יר	0	ı			4
7.0 65.0 8.9 15.0 - 3.4 - 0.0 18.6 - 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	7.0 60.			ı	i	0	1			(0	1	i
7.0	7.0 65.	0	'n	ì	1			0		t	•	0 (1
7.0 80.0 6.0 0.0 0.0 - 7.9 3.2 - 3.3 0.7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	7.0 70.		j,	i	ı	•	ı		د د	1	0		ı
7.0 90.0 0.0 0.0 0.0 - 0.0 0.0 0.0 0.0 0.0 0.	7.0 80.	. 0		l	I		1	ז ע	3 0		0		1
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	DBC.	i	I	ı	Ι,	ł	ı	ı	ı	ı	i	ı	ı	í	i	1	í	ł	l	í	1	1	ı	ı	ı	1 1	1		0.0			ı	ı	1									0.0		ı
1	NOV.	0.0																											ı	1			0.0			1	1	ı	1	1	ı	ŧ	ı	1	ı
	OCT.	0.0			0																																							0.0	
	SEP.	ı	ı	ı	ı	i	ł	ł	ı	ı	ı	1	ı	ł	I	ł	ı	ı	ı	ı	ı	ŀ	ı	ı	ı	1 1	1 1								0	0		0	000				0.0		I
(AUG.	0.9										0	8													0			ı	1	ı	i	I	1	I	ı	I 1	ı	l i	1	ı	1	ı	ı	I
(cont.	JULY	0.0		۳ ش ش					m.				3		0						m			0		ى د												0			0 6			3.1	
lockingtoni	JUNE	ı	1	ı	ı	1	ı	ı	ı	ŀ	ı	ı	ı	ı	ı	1	ı	ı	ı	ı	ı	ı	ı	I	1	1 1		! !	ı	1	ı	1	ı	1	ı	ı	ł I		1 1	1	١	ł	ı	ı	1
s locki	MAY		0			8		0	9				0		0	0				8																0		0					0.0	0.0	ı
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	ON	0.	5.	0	90.	0	3	0	5.	0	0	0	5	0	5	0.	0	0	2.	5.	0	5	0	0	٠ د د		0 0	D L	·		2	0.	0	0	9,	o r	200			0 00	, .	, in	0	70.0	0
	STATION	0.	0	0	0	0	3	3,	3	3	3	3	7.	7.	7.	7.	7.	7.	0	0	0.	0	0	0	٠ د د	ى ر	ى د	ى د •		7	7	7.	7.	7 .						· ~		3	3.	93.0	

TABLE 4. (cont.)

	DEC.	00%00000000	DEC.	0.0		DEC.	111111110010000000000000000000000000000
	NOV.		NOV.			NOV.	000000000000000000000000000000000000000
	OCT.	0000000000	OCT.	0.0		OCT.	000000000000000000000000000000000000000
	SEP.	0000000000	SEP.	3.3		SEP.	900000 0000000
•	AUG.	+ 1 1 1 1 1 1 1 1 1 1 1	AUG.			AUG.	20 0 4 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
(cont.	JULY	000000000000000000000000000000000000000	JULY	0.0	mus	JULY	355.44.20 280.00 280.00 00.
ingtoni	JUNE	0.0 0.0 0.0 0.0 0.0 0.0 0.0 3.5 3.5	JUNE	0.0	simillimus	JUNE	
Icichthys lockingtoni	MAY	NOS	MAY	1	Peprilus	MAY	0000004000000111111111
cichth	APR.	8000000000	APR.	0.0	Pe	APR.	1 0 0 0 0 0 0 0 0 0
7	MAR.	111111111	MAR.			MAR.	
	FEB.	0000 98000	FEB.	0.0		FEB.	0000 1 00000000000000000000000000000000
	JAN.	0000000000	JAN.	0.0		JAN.	000000000000000000000000000000000000000
	2	32.0 40.0 70.0 80.0 80.0 80.0 45.0	2	70.0		Z	550.0 551.0 552.0 552.0 552.0 552.0 552.0 552.0 552.0 552.0 553.0
	STATION	97.0 97.0 97.0 97.0 97.0 100.0 100.0 103.0	STATION	103.0		STATION	73.0 73.0 80.0 80.0 80.0 82.0 83.0 83.0 83.0 83.0 93.0 100.0 110.0 110.0 117.0 120.0

	DEC.	000000		DEC.	1111	111000000000000000000000000000000000000
	NOV.	0.00		NOV.	00.00	
	OCT.	0.0000000000000000000000000000000000000		OCT.		1000 1300 1300 1300 1300 1300 1300 1300
	SEP.	0.000		SEP.	1111	10000000000000000000000000000000000000
	AUG.	111111		AUG.	00000	• •
(cont.	JULY	0.0000000000000000000000000000000000000	ieri	JULY		00000W0000000W004000000000000000000000
simillimus	JUNE	200000	rus cuvier	JUNE	1111	000000000000000000000000000000000000000
	MAY	11111	Tetragonurus	MAY		
Peprilus	APR.	0.0000000000000000000000000000000000000	Tet	APR.		
	MAR.	0.0000		MAR.	1111	0.
	FEB.	11111		FEB.		
	JAN.	0.00		JAN.		
	N	35.0 40.0 34.0 28.0 35.0		N.	17510	118999 10899 10899 10899 1090 1
	STATION	120.0 120.0 127.0 130.0 137.0		STATION	7000	88888 87.00 990.00 990.00 993.00 1000.00 1000.00 1003.00 1003.00 1003.00 1003.00 1003.00 1003.00 1003.00

	DEC.	0000		DEC.	0.0	0,0				0	0 0					3,1					0 (l i	1	0.0	ı		DEC.	0.0
	NOV.	5.9 0.0		NOV.		0.0	1	1	1 1	l l	- 1	ı	ı	1	1 1	1 1	1	1	10			•	- 8	0.0						NOV.	0.0
	ocr.	22.0		oct.		0 0	0.0				9 (9		0 0			0	1 1	1	ı		0.0						OCT.	0000
	SEP.	3.3		SEP.	0	0 (3.7	- 0	0	0	6 (0 6				0 0	0					0 6	- 0	ı	1 1	1	1	ı		SEP.	0.0
•	AUG.	1111		AUG.		1 1	ı	ı	ı	1 1	l I	1	1	t	t	l l	t	i	į :	1 1	1	ı	1	i	1 1	1	1	ł		AUG.	0.0
(cont.	JULY	0000	lae	JULY	0.0		0.0	0.0	0.0			0.0	0.0	0.0	m c	0.01	, m	0.0	0.0	0.4				m c		9 0			mes	JULY	000
cuvieri	JUNE	0000	Chiasmodontidae	JUNE		1 1		- 0		0		0 6																	ectifor	JUNE	1 1 1
	MAY	1 1 1 1	Chiasm	MAY		0.0	0	ı	ı	1 1	1 1	ı	ı	1	ı	1 1	ı	ı	ı	t I	1 1	1	ı	ı	1 1	i	1	1	Pleuronectiformes	MAY	000
Tetragonurus	APR.	0000		APR.	1 .		0.0				0	9 (0						0		0.0		0 1				APR.	0.0
	MAR.	1 1 1 1		MAR.		! I	ı	1	ı	1	1 1	ı	ŧ	ı	ı	ıı	ı	1	0.0	0.0		000	0.0	0.0	0.0	000	, w	0.0		MAR.	1 1 1
	FEB.	0000		FEB.			0.0					0 (0			1	1	1 1	ı	ı	1	1 :	}	ı	1		FEB.	000
	JAN.	0.00		JAN.	1 .		0.0								0		0 4				•	1	ı	ı	l	l i	ı	I		JAN.	3.0
	NC	60.0 80.0 70.0		NO	5.	00	0.09	0	0.0	٠	0 c		5	0.	0.0	00		0	50		•		0	0	٠ د	· -	5.0	0		NC	55.0 45.0
	STATION	113.0 113.0 117.0		STATION	7.	7:	100.0	00.	00.	03.	200	200	07.	07.	07.		10.	13.	20.	20.5	202	20.	23.	27.	30.	300		33.		STATION	60.0 83.0 87.0

1	DBC.	16.3 6.2 6.0 5.5		DEC.	1	1	ı	ļ	ı	ı	ŀ	i	1	1	1 (1	l !	ŝ	ł	ı	ı	i	1	ı	i	ı	ı	i ł	ı	ı	ı	i	ł	ı	i	ı	ı	ŀ	ł	ì
	NOV.	0.0		NOV.	ı	ı	ı	ı	ı	ı	ı	ı	ı	1	l i		1	ı	ı	ł	ı	ı	ı								0 0				13.2					
	OCT.	0000		OCT.	ı	ı	ł	ı	i	I	ı	i	i	1	1	ı	ı	ı	ı	ı	ı	ì				0	0		, 0		b (0.0					
	SEP.	0000		SEP.	1	1	ı	i	ı	ı	ı	ı	ı	ı	ı	ł	i	ŀ	ı	ı	ı	ı	ı	1	ı	ı	ı	1 1	ı	i	ı	1	1	į	ı	ı	ı	1	1	1
	AUG.	1111		AUG.	١	ı	1	ı	ı	ı	i	ł	i	ı		ı	ı	ı	ı	ı	1	ı	i												3.5					
(cont.)	JULY	0000	spp.	JOLY	ı	i	ı	ı	ı	ı	i	1	ş	ŀ	ì	i	i	ı	i	ı	ı	ı	1	0.0				0				0 0			0.0				0.0	
formes	JUNE	0000	- 1	JUNE	1	ţ	1	ı	ı	i	ı	ı	ı	ı	I	ı	ı	ı	i	1	1	ı	ı	1	1	I	I	1 1		ı	i	1	ı	1	1	1	i	ı	ı	1
Pleuronectiformes	MAY	0.0	Citharichthys	MAY		ı	ı	ı	ı	i	ı	ı	ı	ı	ı	ı	j	ı	ı	ı	1	1	ŧ					0		ę		0 (- 1	0.0			- 0	0.0	
Pleur	APR.	0000	0	APR.		1	ı	ı	ı	ı	ı	I	í	i	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	1	ı	ı	1 (. 1	ı	1	١	ı	1	ı	ı	ı	1	ł	ı
	MAR.	0.0		MAR.		ı	ł	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	1	ı	ı	1	1	ŧ i	1 1	: 1	ł	ı	1	١	ŀ	ı	1	1	1	ì
	FEB.	0.00		FEB.		ı	ı	ı	I	ı	í	Į	i		1.9						9		9	4.								0 1	7	6	18.0	5				
	JAN.	0.00		JAN.	1 .	2.	- 0	2.5								3.5	ı	ı	ı	ı	ı	ı	1	1		- 4						50		6	0.0		9	6.		9
	NC	32.0 39.0 37.0		N	0	2	0.	0	0	0	S.	0	0	90.	•	20.	٠ د	0	80.	0	51.	0.	0.	0	2.	5.	0	s c					2 10		65.0	0	0.	0.	8	0.
	STATION	90.0 100.0 118.0		STATION	0	0	0.	0	0	m	m	7.	7.	-	· ·	÷.	÷	3	3	ä	7.	7	7.	0	0	0	0	50			סרי	, ~	m	m	63.0	3	3	3	7	7.

	DEC.	
	NOV.	12
	OCT.	11000000000000000000000000000000000000
	SEP.	
	AUG.	20
(cont.)	JULY	4 4 3 1 1 2 2 2 2 2 2 3 3 1 1 1 1 1 1 2 2 3 3 3 3
s spp.	JUNE	
Citharichthys spp.	MAY	0000 1 000 000 000 000 000 000 000 000
Citha	APR.	000000000000000000000000000000000000000
	MAR.	*
	FEB.	1115 1185 1186 1187 1187 1187 1187 1187 1187 1187
	JAN.	20000000000000000000000000000000000000
	ON	55.0 65.0 70.0 80.0 80.0 80.0 100.0 1
	STATIO	67.0 67.0 67.0 67.0 67.0 70.0 70.0 70.0

	DEC.	22
	NOV.	0 000 E
1	OCT.	
	SEP.	10000000000000000000000000000000000000
	AUG.	24.
(cont.)	JULY	20070000000000000000000000000000000000
spp.	JUNE	000000000000000000000000000000000000000
itharichthys	MAY	
Cithar	APR.	0000000 w0000 000000000000000000000
	MAR.	
	FEB.	00000000000000000000000000000000000000
	JAN.	121 0.00004#00#00#0000000000000000000000000
		28000000000000000000000000000000000000
	STATION	

	DEC.	1.6				0 (0		0				9	4 4	4							· ·	ا رو		5					. o							0 0	6 6	
	NOV.	1 1	ı	ı	1 1	. 1	ı	1	ı	ı	ı	ı	ı	1 1	1	1	1	ı	ı	ł	ŧ	1	ı	1 :	1	1	ı			0.0	i 1	1	ı	ı		٠. د		• c			0:
	OCT.	0.0				0 (. 4									រស		0					0.	ם ע	•	m		ı	i		o a	40.8	4.	25.		ı	1 1	1	1 1	1	1
	SEP.	13.2	3				- 6									0 4							· ·								•						'n	0	200		
	AUG.	1 1	1	ı	1 1	1 4	1	1	ı	ı	ı	ı	ı	1 1	ı	1	i	ı	1	ı	ı	ı	ı	ı	1 1	1	1	ı	ı	ı	i I	1	ı	ı	ı	1	1	ı	1 1	1	ı
(cont.)	JULY	2.9				ء د		0							٠										0 5		7			0			0		7			٠	0		
s spp.	JUNE	800			0		• •		- 4					•	•				0				•										6	3		ė.				• •	
Citharichthys	MAY	1 1	ı	ı	t I	1 1	1	1	ı	1	ł	ŧ	ı	1 1	1	ı	١	ı	1	ł	ı	ı	ı	ı		ı	1	ı	ı	ı	1	1	i	1	ı	ı	ı	i		ı	ı
Citha	APR.	9.7					р (0								0 0		0			9					0 (0 0								•	
	MAR.	1 1	1	i	1	l I	ı	i	ı	ı	ı	ı	ı	1 1		1	1	1	1	ı	ı	ı	ı	ı	l l	. 1	ı	1	i	1	I 1	1	ı			÷.	2		000	0 1	
	FEB.	9 9			٠			0			0			•				0	-		5.	0	0		> a	0 (, –	17.	7.	0,			2			1	ŀ	ı	1 1	ı	ı
	JAN.	6.2			٠							0		•														- 0										0		ı	ı
	Z	30.0	0	5.			٥,	5	5	0.	5	ů,	٠ د د	٠ د		. 6	0	5	0	5.	0	0	0	٠ د	o c	. י	. 0	5.	0	00	, כ	4	5.	0	5.	0	٠ د	•	o y	5 6	2.
	STATION	03.0	, . ,	٠ ش	n (÷ -	, ,	7.		7.	0	0	· .			om	, m		3	3.	33	3	m i	-:	:	7:	7	7.	7.	7.	00	.0	0	0.	0	0	0		٥,	٠ د	

	DEC.	24.1	2								ı			0.0					0				1		DEC.	1	i	1	1	ı	1 1	ı	i	1 1	1 1	ı	ı
	NOV.	0.0						5					0	0 6	0				2.				0.0		NOV.	į.	1 1	1	1				8			108.4	2
	OCT.					000	0		9	0		9	S V	200	9			0		٠ وا ر			00.0		OCT.	1 :	l	1	l							0.9	
	SEP.	3.4		÷	1	ı	ı	ı	ı	1	i	!		ı	1	ı	ı	ı	ı	ı	1	ı	1		SEP.	1	1 1	ı	1	ŀ	1 1	ı	ı	1	1 1	ı	ı
	AUG.		ı	1	1		ı	ı	i	ı	ł	1 1		1	ı	ı	ı	1	ı	ı	ı	1 1	1		AUG.	١	1 1	1	ı						0 0	0.0	
(cont.	JULY	0.0	5.	0	-i c	0 0								0 (- 4	0					0			gmaeus	JULY	1		ı	ı						0 (0.0	
s spb.	JUNE	000				0 0		5.	3.		7			0 1									0	sti	JUNE	ı	1 1	ļ	ı	i	1 1	ı	i	ı	1 1	1	ì
Citharichthys	MAY		ı	ŝ	i	1 1	i	1	1	ı	i	1) (1	1	ı	ı	ĺ	ı	ı	I	ì	1	Citharichthys	MAY	١	I	ı	ı							3.0	
Citha	APR.	2.8				0 0							0	• 1									0 0	Cith	APR.	ŀ	1 1	ı	ı	ı	1 1	1	ı	ı	1 I	1	ı
	MAR.	0.0	5		-; c			6	0.				•					3	. 0	0		ه و			MAR.	1	1 1	1	ŀ	1	1 1	ı	ı	1	l i	i	ı
	FEB.		1	ı	ı	1 1	1	ı	į	ı	ı	ı	1 1		1	ı	ı	ı	ı	ı	ı	I	ł ł		FEB.											0.0	
	JAN.		1	1	I	1 1	ı	I	ŀ	ı	ŀ	1 -	}	1	ı	ı	1	ı	i	1	ı	ı	1		JAN.	2.9	0	ı	ı	1 -						0.0	
	NC	45.0	3	ক	o r	0	8	0	5.	0.	٠	٠,	٠ ١	· -	, L	0	0.	0.	2	۳,	0 '	· ·	00		NC	100.0	50	0	0	0	'nc	, in	0.	0	50	2	0
	STATION	123.0	27.	27.	27.	27.	30.	30.	30.	30.	30.	30.	, ,	ال الد الد الد الد الد الد الد الد الد الد الد	300	33.	33.	33.	37.	37.	37.	37.	37.		STATION	40	, ,	0.	3	7		. 0	0.	0.	9 (3	ä

	DEC.		
	NOV.	133.22 1 1 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
	OCT.	2 2 3 3 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	
	SEP.		
t.)	AUG.	22222 22222 22222 22222 22222 22222 2222	
s (cont.	JULY		
stigmaeus	JUNE		
	MAY	00 000 mo 00000000000000000000000000	
Citharichthys	APR.	0000000 000000 0000000 0000000 00000000	
Cit	MAR.		
	FEB.	00.001.01.41.00.001.41.00.000.000.000.00	
	JAN.	20000000000000000000000000000000000000	
		00000000000000000000000000000000000000	
	STATION	633.0 633.0 643.0 677.0 677.0 677.0 700.0 800.0	

	DEC.		
	NOV.		
	OCT.	1 1 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
	SEP.	24 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	000
(t.)	AUG.	118 91 4.8 10.5	1111
s (cont.	JULY		
stigmaeus	JUNE		
	MAY	00 100 00 00 00 00 00 00 00 00 00 00 00	1 1 1 1 1
Citharichthys	APR.		
Ci	MAR.		1111
	FEB.	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	00000
	JAN.	00 000mmmmomooo 00000000moomoooooooooo	
	Z	0.000000000000000000000000000000000000	0000
	STATION		0000

	DEC.			DEC.
	NOV.		111	NOV 0.0 0.0 0.0 0.0 0.0 0.0
	OCT.	22.20 100.00 17.00 10.00		OCT. 2.9 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0
	SEP.			SEP. 1 1 . 8
ıt.)	AUG.		1 1 1	AUG. 0.0 0.0 0.0 0.0
s (cont.	JULY	000000000000000000000000000000000000000	• • 12	7 7 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
stigmaeus	JUNE	000000000000000000000000000000000000000	0.0 3.2 ina s	00000000000000000000000000000000000000
	MAY		ippogloss.	MAN 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Citharichthys	APR.		H	APR.
Ci	MAR.		0.0	MAR.
	FEB.			FEB.
	JAN.			. 000000000000000000000000000000000000
	N.C	0.000000000000000000000000000000000000	000	22 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
	STATION	103.0 103.0 103.0 103.0 103.0 107.0 107.0 110.0 110.0 113.0 113.0	20.	STATION 63.0 80.0 80.0 80.0 80.0 81.0 82.0 82.0 83.0 83.0 83.0 83.0 83.0 83.0 83.0 83

TABLE 4. (cont.)

	DEC.	000000000000000000000000000000000000000	DEC.	200000000000000000000000000000000000000
	NOV.	1 1 0 0 0 0 0 0 0 0	NOV.	HW0000000
	ocr.	0.0000000000000000000000000000000000000	OCT.	00000000000000000000000000000000000000
	SEP.	0.0000111111111111111111111111111111111	SEEP.	7. T. T. T. T. T. T. T. T. T. T. T. T. T.
(AUG.	1111111111111	AUG.	00004200011111111111
(cont.	JULY	0.0 5.0 0.0 7.5 0.0 0.0 0.0 3.8 0.0 3.4 2.5 0.0 3.0 0.0 0.0 3.4 3.8 0.0	JULY	177.88 0.00 0.00 0.00 0.00 0.00 0.00 0.00
stomata	JUNE		JUNE	0.000.000.000.000.0000.0000.0000.0000.0000
	MAY	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	MAY	000000000000000000000000000000000000000
Hippoglossina	APR.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	APR.	1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	MAR.	100000000000000000000000000000000000000	MAR.	
	FEB.	0.011111111111111111	FEB.	2.4 2.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0
	JAN.	0000	JAN.	
	ATION	0.0 30.0 3.0 36.0 3.0 36.0 7.0 33.0 7.0 33.0 0.0 28.0 0.0 30.0 0.0 45.0 0.0 45.0 0.0 45.0 3.0 25.0 3.0 25.0 7.0 35.0 7.0 35.0	STATION	3.0 50.0 7.0 51.0 7.0 51.0 7.0 51.0 7.0 51.0 2.0 47.0 3.0 51.0 7.0 28.0 3.0 27.0 3.0 27.0 3.0 27.0 7.0 28.0 7.0 29.0 7.0 29.0 7.0 29.0 7.0 30.0 7.0 29.0 7.0 30.0 7.0 30.0 7.0 29.0 7.0 29.0
	ST	222222222222222222222222222222222222222	ST	100777788888888888888888888888888888888

	DEC	7.0000000000000000000000000000000000000	DEC	00000000000000000000000000000000000000
	NOV.	0.000	NOV.	0.00 0.00 0.00 0.00 0.00 0.00
	OCT.	000000000000000000000000000000000000000	ocr.	10000000000000000000000000000000000000
	SEP.	0 000000000111	SEP.	SEP.
(cont.)	AUG.	1 1 1 1 1 1 1 1 1 1 1 1 1 1	AUG.	AUG.000000000000000000000000000000000000
	JULY	0.0 4.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	JOLY	achirus July July 3.5
Paralichthys californicus	JUNE	0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.8 0.0 0.0 0.0	JUNE	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0
hys cal	MAY	Xystreurys	MAY	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
ralicht	APR.	XX	APR.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
Pa	MAR.	00000	MAR.	MAR.
	FEB.	115.0 225.2 229.2 611.4 611.4 0.0 0.0 0.0	FEB.	00000000000000000000000000000000000000
	JAN.	000000000000000000000000000000000000000	JAN.	AM.
	2	30.00 310.00 310.00 310.00 310.00 310.00 310.00 310.00 310.00		222 00 00 00 00 00 00 00 00 00 00 00 00
	STATION	103.0 107.0 1107.0 110.0 118.0 120.0 120.0 120.0 130.0	STATION	87.0 93.0 97.0 100.0 1120.0 123.0 133.0 133.0 133.0 133.0 60.0 60.0 60.0

| : | 0000000m4m000000

TABLE 4. (cont.)

	DEC.	1111111	DEC.	0.0 7.6 0.0	1	DEC.	1		DEC.	
	NOV.	0000000	NOV.	1		NOV.	0.0		NOV.	000000000000000000000000000000000000000
	OCT.	3.20	ocr.	00000		OCT.	0.0		OCT.	000000000000000000000000000000000000000
	SEP.	111111	SEP.	00000		SEP.	ı		SEP.	
it.)	AUG.	10.3 0.0 0.0 0.0 0.0	AUG.	1 1 1 1 1		AUG.	0.0		AUG.	1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
is (cont.	JULY	0.0 0.0 0.0 3.9 0.0 0.0	JULY	20000	bilineata	JULY	0.0	is	JULY	13.9 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
zachirus	JUNE	- 0. - 0. - 3. - 3. - 0.	JUNE	1		JUNE	ı	exil	JUNE	
phalus	MAY	0.0 3.4 7.5 0.0 0.0 3.4 3.9 0.0	MAY	0.01111	Lepidopsetta	MAY	0.0	Lyopsetta	MAY	300 300 300 300 300 300 300 300 300 300
Glyptocephalus	APR.	HAD	APR.	00000	Lepi	APR.	ı	I	APR.	
5	MAR.	1111111	MAR.			MAR.	ł		MAR.	
	FEB.	0000000	FEB.	0.0 0.0 0.0		FEB.	21.0		FEB.	40000000000000000000000000000000000000
	JAN.	0000000	JAN.	00000		JAN.	0.0		JAN.	008000000000000000000000000000000000000
		70.0 65.0 70.0 70.0 90.0 75.0 80.0	2	28.0 30.0 30.0		Z	52.0		2	50.00 552.00 552.00 552.00 552.00 50.00 50.00 50.00 50.00
	STATION	63.0 67.0 67.0 67.0 77.0 73.0	STATION	90.0 97.0 97.0 120.0		STATION	0.09		STATION	60.0 60.0 60.0 60.0 60.0 63.0 67.0 67.0 67.0 70.0 70.0

,	DEC.	1111111111111000010000000000	DEC.	1111111
	NOV.	000000000000000000000000000000000000000	NOV.	0000000
	OCT.		OCT.	00004000
	SEP.	000000000000000000000000000000000000000	SEP.	1 + 1 1 1 1 1 1 1
	AUG.	000000000000000000000000000000000000000	AUG.	0.000.0
(cont.)	JULY	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	JULY	00440000
	JUNE	- 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	JUNE	1111111
Lyopsetta exilis	MAY	10.6 6.8 6.8 7.2 7.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	MAY	
Lyops	APR.	10000000000000000000000000000000000000	APR.	1111111
	MAR.	0 00.	MAR.	*
	FEB.	000000000000000000000000000000000000000	FEB.	0.0000000000000000000000000000000000000
	JAN.	wooowwoowwooooooooo	JAN.	0000000
	2	665.0 665.0	Z	51.0 60.0 65.0 70.0 90.0 90.0
	STATION	73.0 77.0 77.0 77.0 880.0 882.0 883.0 883.0 883.0 887.0 990.0 990.0 990.0 1110.0 11123.0	STATION	57.0 60.0 60.0 60.0 60.0 63.0 67.0

	DEC.	00 0000000000	DBC.	1111111
	NOV.	000000000000000000000000000000000000000	NOV.	11111000
	OCT.		OCT.	0000
	SEP.	000000000000000000000000000000000000000	SEP.	111111
•	AUG.	momooooooooooo	AUG.	0000
(cont.	JULY	22 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	JULY	0000
Microstomus pacificus	JUNE	6.0 6.0 6.0 0.0 0.0 0.0 0.0 0.0	JUNE	1111111
omus pa	MAY	2.9 0.0 0.0 10.6 10.6 4.8 4.8 4.1 4.1 5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	MAY	2.1 2.7 0.0 0.0
licrost	APR.		APR.	1 1 1 1 1 1 1 1
×	MAR.	0	MAR.	11111111
	FEB.	HHOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO	FEB.	46.6 79.8 79.8 396.0 217.5
	JAN.		JAN.	8.6
	7	250 250 250 250 250 250 250 250	Z	38.0 52.0 51.0 52.0 52.0 52.0 60.0
	STATION	70.0 70.0 70.0 70.0 70.0 73.0 73.0 73.0	STATION	53.0 53.0 53.0 60.0 60.0 60.0

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	SEP.	
	AUG.	000000000000000000000000000000000000000
cont.)	JULY	
vetulus (JUNE	
	MAY	000000000000000000000000000000000000000
Parophrys	APR.	10000000000000000000000000000000000000
	MAR.	1:11:1:1:1:1:1:1:1:1:1:1:1:1:1:1:1:1:1:1
	FEB.	22 22 22 23 24 25 25 25 25 25 25 25 25 25 25 25 25 25
	JAN.	0.0000000000000000000000000000000000000
		0.000000000000000000000000000000000000
	STATION	60.0 63.0 63.0 63.0 63.0 63.0 63.0 63.0

TABLE 4. (cont.)

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	DEC	i		DEC	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0000
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	OCT.	0.0		OCT.		0.00
	SEP.	ı		SEP.	SEP.	0.0 2.1 0.0 3.1
	AUG.	0.0		AUG.	AUG.	1111
spp.	JULY	0.0	coenosus	JULY	7.0 0.0 0.0 0.0 0.0 0.0 3.7 0.0 3.7 0.0 3.7 AGCULLENS NNE JULY 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	0000
chthys	JUNE	ı		JUNE	hys dec	0.00
Pleuronichthys	MAY	0.0	Pleuronichthys	MAY	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	1 1 1 1
4	APR.	ı	Pleu	APR.	PIEN PIE APR. APR. APR.	0000
	MAR.	ŧ		MAR.	0.0 0.0 0.0	1 1 1 1
	FEB.	1.4		FEB.	FEB.	0000
	JAN.	0.0		JAN.	U AAN	0.00
	NC	52.0		NC	555.0 600.0 60	29.0 30.0 33.0
	STATION	63.0		STATION	73.0 80.0 83.0 83.0 83.0 83.0 87.0 90.0 90.0 100.0 1107.0 127.0 60.0 63.0 63.0 73.0 73.0 80.0	97.0 97.0 100.0

TABLE 4. (cont.)

	DEC.	22.9	1	DEC.	1 1	1	1 1	i	ii	ı	ı	I									0																
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E.)	AUG.	1 1 1		AUG.	0.0						0	- 0		ı	I	l í	ı	ı	ι	ı	ı	ŀ	ı	li	1	1	1	ı	ļ	1	ı	† 1		ţ	ı	ı	
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	FEB.	0.0		FEB.	0.0	0				·			4.		0	m c				9	- 6	0	0		0	0	0 6		3,						1	t	
	JAN.	0.0		JAN.	35.6						0 0				0		0	0 0	0							0							•		ı	i	
	Z	25.0 40.0 23.0		Z	50.0	8	m c			7 1	,	3	-	8	0	» С			0	5	9.	0	2.	ъ, с	, L	;	. 6		2	5	0	9.	하나	9	7	m	
	STATION	120.0 120.0 137.0		STATION	63.0				0		, , , m	9	33	7.	7.	00	٠,	 . m	 	3	7.	7 .	97.	000			03.	07.	07.	10.	10.	7.	20.	23.	23.	27.	

TABLE 4. (cont.)

	DEC.	0.0		DEC.	00.0	 	DEC.	0000000000
	NOV.	0.0		NOV.	00000011		NOV.	00m0000000001111111111
	ocT.	0.0		OCT.	00000000		OCT.	
	SEP.	1-1		SEP.	000		SEP.	00000000000000000000000000000000000000
(cont.)	AUG.	1 1		AUG.	17.4		AUG.	122.55 144.00 144.00
	JULY	0.0	melanostictus	JULY	00040000	•	JULY	65.77 60.00 65.77 60.00
verticalis	JUNE	0.0	melano	JUNE	11111111	rus spp	JUNE	00000
	MAY	1 1	settichthys	MAY	000000000	Symphurus	MAY	000000000000000000000000000000000000000
Pleuronichthys	APR.	2.6	Psetti	APR.			APR.	000000000000000000000000000000000000000
Ple	MAR.	0.0		MAR.	11111111		MAR.	1
	FEB.	1 1		FEB.	0.00		FEB.	000000 00000000000000000000000000000000
	JAN.	1 1		JAN.	000000000000000000000000000000000000000		JAN.	000000000000000000000000000000000000000
	STATION	133.0 25.0 137.0 22.0		STATION	60.0 50.0 60.0 63.0 52.0 67.0 48.0 83.0 60.0 87.0 87.0 87.0 87.0 87.0 87.0 50.0		STATION	67.0 65.0 67.0 70.0 51.0 77.0 55.0 80.0 77.0 55.0 80.0 77.0 55.0 80.0 55.0 83.0 47.0 83.0 60.0 83.0 60.0 83.0 87.0 97.0 35.0 97.0 30.0 97.0 45.0 100.0 45.0

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	SEP.	SEP. SEP.
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spp. (c	JUNE	ed fish
Symphurus	MAY	ntegrated MAX J
Sym	APR.	Disi
	MAR.	00000000000000000000000000000000000000
	FEB.	00000000000000000000000000000000000000
	JAN.	7 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
	Z	X470040044040404040404040404040404040404
	STATION	100.0 1003.0 1007.0 1007.0 1113.0 1113.0 1117.0 117.0 117.0 117.0 117.0 117.0 117.0 117.0 117

TABLE 4. (cont.)

Disintegrated fish larva (cont.)

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	SEP.	0.0000000000000000000000000000000000000
ıt.)	AUG.	
larva (cont.	JULY	0 0 0 0 0 0 1 1 1 0 0 4 W 0 2 1 0 0 0 0 0 0 W W 0 0 0 0 0 0 0 0 0 0 0
ish	JUNE	
rated f	MAY	000000 10 m0000 m 000 m000 m000 m000
Disintegrated	APR.	26000 1001 1001 1000 1000 1000 1000 1000
D	MAR.	
	FEB.	1 1 0 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
	JAN.	00000000 1 1 1 1 1 1 1
	ON	50.00 100.00
	STATIC	773.0 773.0 773.0 773.0 777.0 777.0 777.0 777.0 880.0 880.0 883.0 883.0 883.0 887.0 887.0 990.0

	DEC.	
	NOV.	
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	SEP.	10000000000000000000000000000000000000
t.)	AUG.	
rva (cont	JULY	Guayaoucoucocococococoucocoucocococococococo
ish lar	CUNE	11.11.11.11.11.11.11.11.11.11.11.11.11.
egrated fi	MAY	manacha 1000m00k00
sintegr	APR.	
Di	ILAR.	E 0
	EB.	10.00 10.00
	JAN.	
		1140.0 120.0 1
	STATION	990000 990000 990000 990000 990000 990000 100000 100000 100000 100000 100000 100000 100000 100000 100000 100000 100000 100000 100000

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	SEP.	00000000000000000000000000000000000000
t.)	AUG.	
va (cont.	JULY	00000000000000000000000000000000000000
ish larva	JUNE	10000 10000
4	MAY	
Disintegrated	APR.	22 22 22 22 23 24 25 25 25 25 25 25 25 25 25 25 25 25 25
Di	MAR.	0.
	FEB.	10.1 10.1 10.0
	JAN.	000000000000000000000000000000000000000
	TON	00 00 00 00 00 00 00 00 00 00 00 00 00
	STATI	103. 103. 103. 103. 103. 103. 103. 103.

fish larva (cont.)

Disintegrated

DEC. 1111 NOV. NOV 1111 OCT OCT SEP. SEP 1 1 1 1 AUG. AUG. 1 1 1 1 larva JULY JULY 1 1 1 1 Unidentified fish JUNE JUNE 1 1 1 1 MAY MAY 1111 APR. APR 1 1 1 1 MAR MAR 1 1 1 1 FEB. FEB 1 1 1 1 1.7 10.1 40.6 5.3 JAN. JAN 38.0 90.0 100.0 80.0 STATION STATION 40.0 40.0 43.0

! !	DEC.			I	1	i	ı	ı	ı	ı	ı	ı	ı	ı		i	i	ı	ı	ı	ı	1	ı	1	l	i	1	ı	ŀ	ı	ı	ı	ı	I	ŀ	ļ	ı	ŧ 1		1 1			l	1		. 1	ı	t	
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(cont.	JULY		ı	ı	ı	ı	ı	1						7									- 4		0.0)																			8			•
h larva	JUNE		ı	ı	1	1	1	1	1	1	ı	ı		ı	ı	1	1	1	1	1	i	1	ŀ	t	1	4	1	1	ŧ	1	1	ı	i	1	1	ı	ı	1	ı	ı	1	ı	ı	ı	ı	ı	1 1	1	
ied fish	MAY		ı	ı	í	1	1	1		-		0								0											9					0			0		0								
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	STATION	1	7.0	0.0	3.0	3.0	7.0	7.0				्रिक ()	0.0	0.0	0.0	3.0	3.0	3.0	0	7.0	7.0	7.0	2.0				0.0	3.0	0	3.0	3.0	3.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	3.0	200	

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	SEP.	111006000000000000000000000000000000000
(• :	AUG.	000
a (cont.	JULY	00000000000000000000000000000000000000
sh larva	JUNE	1
fied fi	MAY	00000mm0000m00000000000000000000000000
Unidentif	APR.	18 18 18 18 18 18 18 18
Un	MAR.	
	FEB.	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
	JAN.	00000000000000000000000000000000000000
		NCBEE4488824EE44886666666666666666666666666
	STATION	88888888888888888888888888888888888888

	DEC.		
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	SEP.	100.00 100.00	
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a (cont.	JULY	40 E O O O O O O O O O O O O O O O O O O	
sh larva	JUNE	40004E000E0000E0000E0000EEEEEEEEEEEEEE	
fied fi	MAY		
Unidenti	APR.	1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
Ur	MAR.		
	FEB.	100.00 100.00	
	JAN.		
		22000000000000000000000000000000000000	
	STATION	1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1003.0 10	

	DEC.	
	NOV.	
	OCT.	0.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	SEP.	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
t.)	AUG.	
va (cont.	JULY	22000000000000000000000000000000000000
ish larva	JUNE	22200000000000000000000000000000000000
ified f	MAY	
Unidentif	APR.	
ב	MAR.	0.000000000000000000000000000000000000
	FEB.	28000000000000000000000000000000000000
	JAN.	00000041000000mmo11111111111111111111111
	NC	0.000000000000000000000000000000000000
	STATION	11177.0 11177.

4.9 15.1 0.0 DEC. 000000 38.9 115.9 3.2 3.2 3.2 OCT. SEP. 1 1 1 1 1 1 AUG. $\begin{smallmatrix}&1&1&1&1&1&1\end{smallmatrix}$ Unidentified fish larva (cont.) 30.8 3.3 37.6 6.4 9.4 JULY JUNE 2.6 0.0 0.0 39.9 21.0 MAY 11111 APR. 000000 FEB. 11111 JAN. $1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1$ 222.0 23.0 35.0 40.0 60.0 STATION 137.0 137.0 137.0 137.0

Summary of pooled occurrences of all larval fish taxa taken on CalCOFI surveys from 1961 to 1969. Taxa are listed in the same order as Table 4. TABLE 5.

NAME	1961	1962	1963	1964	1965	1966	1967	1968	1969
			1				1	1	
Anguilliformes	7	œ		00		17	ĸ	m	13
Etrumeus acuminatus	4	7	36	37	35	26	7	1	6
Opisthonema spp.	ı			1			1		1
Sardinops sagax	5	5	9	8		143	3		7
Engraulis mordax	408	454	567	707	~ ا⊸	∞	150	188	088
Argentina sialis	87			3.7			77		יי עם מיי
Microstoma microstoma	12			31		44 C	א ע		ر د د
Nansenia candida				22	, c	U 4	0 0		70
Nansenia crassa	67		200	5.		40 00 L	y 0	3 0	24C
Bathylagus spp.		⊣ 1	40	-l r		T 0	ום		٦ ٣
Bathulams ochotensis	5.7	99	96	196	127	9	28		359
) 			١m		2			
	Ą	9	9	m	2	461		06	328
Leuroglossus stilbius	202	225	236	360		₹,	43		9
Dolichopteryx spp.				1	l	ı	1	1	т
Macropinna microstoma	٦	ł	ı	1	ì	1	ı	1	ŧ
Osmeridae	ı	ı	2	1	ı	ŀ	ı	i	~
Stomiiformes	12	4	m	9	7	9	6	1	
Gonostomatidae			\neg		7				126
Cyclothone spp.	214	277	241	247	265	593	80	65	4
Diplophos taenia	2	5	7	1	m		1	-	7
Ichthyococcus spp.		$\overline{}$	\neg	_		$^{\circ}$			3
Vinciguerria lucetia	342	371	383	369	436		121	82	479
Vinciguerria poweriae	n	7	m	4	m	9	1	ı	;=
Woodsia nonsuchae	١	l	-	I					
Sternoptychidae	54	71	45	79	59	250	28	48	469
Astronesthidae	1	2	1	1			1		- 1
Chauliodus macouni	28	28	31	99	57	171		46	189
Idiacanthus antrostomus	48	43	26	32			LS		4 ,
Aristostomias scintillans	ט ה	10	ש עכ	n <u>م</u>	ט ⊲		7 0	۱ -	11
Barnopullus spp.	۰ ۲	٦٢	34		3 " c	C	7		7
Fustomias Spp.	17	٦٢	۱۲	7 (۷ ۲	<	1 1	⊣ 1	1 8
Fuctoricus app.	7	7 <	7	2 4	00		٣	ı	A
Stomias atriventer	28	76	98	81	100	326	24	46	214
Evermannellidae			7	1			t		
Paralepididae	1	ı E	2	10	· C	1	1	c	
Lestidiops ringens	50		58	63	29	232	36	52	231
Notolepis risso	6	12	6	7	6			8	18
Paralepis atlantica	i	1	ı	į.	-	1	ı	1	1
Stemonosudis macrura	₹ (9 •	1	2 5	9 •	2	1	-	Т
Sudis atrox	7	4	i	7	₽	1 -	1	1	ı
Autopus spp.			l a				۷ ا	۱۳	36
Scopelarchidae	67	09	50	21	37	114	29	13	0 0 0
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TABLE 5. (cont.)									
NAME	1961	1962	1963	1964	1965	1966	1967	1968	1969
			- 1	(1	
Myctophidae		151		220 146	222 156	346 302	37	23	
Diaphus spp.	7	50	4	Ç	8	8	46	34	HC
Lampadena urophaos Lampanurtus sop.		34		25	183	0	67	65	10
Lampanyctus regalis	m L	12		20	9	40	12	11	- L
Lampanyctus ritteri Notoluchnus valdiviae	154		77) — (201	22	C .		1
Notoscopelus resplendens		41		39	44	54 -	11	ומ	7
Farvilux ingens Stenobrachius leucopsarus	177	179	186	342	263	420	m ·	127	390
Triphoturus mexicanus	0	7	2	d,	2	2		76	Ω.
Tripnoturus migresceus Benthosema pterota	r 1	ı	\$	ı	1-1-	3	1	ı	1 6
Centrobranchus spp.	2.5	10	1 0	2 5	2 [¥	191	٦ د ا	79
Diogenichthys Spp. Diogenichthus atlanticus	102	155	00	111	116	171	289	46	210
Diogenichthys laternatus	0	2	191	9	₹'	9	63	32	⊣ .
Riectrona rissoi Conichthus tenniculus	20	24	29	46	81	146	16	12	48
Hygophum spp.	4	c (29	9;	-10	4 07 0	ן נ	14	13
Hygophum atratum	27	بر بر بر	27	20	103	•	7	ρi	10
Hygophum reinharacii Loweina rara	ر ش	4	2	3 ◆*	8	9		1	בו
Myctophum nitidulum	A.	4	m (CD (10	111	8 0 0	59
Protomyctophum crockeri	247	252	225	767	197	1/0		ר	4
Symbolophorus californiensis	ω (140	-	116	111	291	38	61	157
Tarletonbeania crenularis	160	10	41	בה נהו	こね	2 5	23	2 1	5
Synouus spp. Breqmaceros spp.	1	1	1 1		1		1	ı	1
Microgadus proximus	160	228	220	240	790	398	25	95	361
Merluccius productus Phusiculus spo.	n	4	4	3	3	1		1 1 1	1 1
Macrouridae	4	9 5	9 2	A 5	23	50	201	15 3	14
Ophidiitormes Arcemonhucis marginata	10	16	n n	# L CJ	7	17	2	φ α	16
Carapidae	i	1	1	-	1 1	1 1	1 4	I	1 0
Chilara taylori	12	31	15	11	23 V	55	15	()	34
Ophidion scrippsae Porichthus spo	7 [1	1 0	1	o l	5	1	1	2
Ceratioidei	15	26	17	7	18	43	1 1	1 1	30
Gobiesocidae	m c	1 t	٥ ۲۰	ജന	2 2	10	1 1	2	5
Hemiramphidae	1 1	1 3	1 6	2	r-1 0	1 5	10	100	37
Cololabis saira	Ξ'	9 1	13	22	ω ω	11	5 C	7	5
Trachipteridae	27	27	20	22	19	75	9 1	61	80
Eutaeniophoridae	l								

61 51 138 138 12 705 47 19 1969 1968 20 12 13 14 14 14 14 1967 26 1 62 698 87 25 77 51 198 105 1966 36 31 27 27 39 39 39 10 10 25 387 20 30 73 1965 16 492 20 15 669 808 118 127 134 134 1963 7 17 12 12 208 14 41 41 41 12 12 10 10 10 1962 1961 Scorpaenichthys marmoratus Medialuna californiensis Scopelogadus bispinosus Macroramphosus gracilis Chaetodipterus zonatus Caulolatilus princeps Scopeloberyx robustus Trachurus symmetricus Semicossyphus pulcher **Costeus** aenigmaticus Oxyjulis californica Chromis punctipinnis Hypsypops rubicundus Coryphaena hippurus Caristius macropus Anoplopoma fimbria Ophiodon elongatus Hypsoblennius spp. Clinidae Girella nigricans Oxylebius pictus Sebastolobus spp Halichoeres spp. TABLE 5. (cont.) Seriola lalandi Zaniolepis spp. Howella brodiei Welamphaes spp. Syngnathus spp Poromitra spp. Prionotus spp. Scorpaena spp. Bexagrammidae Cyclopteridae Sebastes spp. Pomacentridae Scorpaenidae Acanthuridae Blennioidei Apogonidae Haemulidae Mugil spp. Brama spp. Carangidae Gerreidae Sobiidae Labridae Mullidae Agonidae Cottidae NAME

1969 1968 108 19 12 13 1967 171 83 81 81 33 36 36 72 72 80 80 11 11 11 11 11 13 81 29 68 3 74 31 131 131 74 60 1965 243 733 442 96 18 18 18 19 13 46 41 1963 1962 186 50 24 21 1961 184 Psettichthys melanostictus Pleuronichthys ritteri Pleuronichthys verticalis Paralichthys californicus Disintegrated fish larva Unidentified fish larva Pleuronichthys decurrens Bothus spp. Citharichthys spp. Citharichthys stigmaeus Syacium ovale Xystreurys liolepis Glyptocephalus zachirus Pleuronichthys coenosus Lepidopsetta bilineata Lyopsetta exilis Microstomus pacificus Platichthys stellatus Hippoglossina stomata Hypsopsetta guttulata Icichthys lockingtoni Peprilus simillimus Tetragonurus cuvieri Chiasmodontidae Pleuronichthys spp. Trichiuridae Sphyraena argentea Scomberomorus spp. Pleuronectiformes Parophrys vetulus Scomber japonicus Auxis spp. Sarda chiliensis Tetraodontidae Symphurus spp Polynemidae Scombridae Sciaenidae Serranidae Sempylidae Soleidae Sparidae Nomeidae NAME

TABLE 5. (cont.)

TABLE 6. List of stations which were occupied twice in one month during 1969.

Sta	tion	Month
63.0	50.0	2
63.0	52.0	
63.0	55.0	2
67.0	48.0	2
67.0	50.0	2
67.0	55.0	2
67.0	60.0	2
67.0	65.0	2
67.0	70.0	2
67.0	80.0	2
67.0	90.0	2
70.0	51.0	2
70.0	53.0	2
70.0	60.0	2
70.0	65.0	2
70.0	70.0	2
70.0	90.0	2
70.0	100.0	2
73.0	50.0	2
73.0	53.0	2
73.0	60.0	2
73.0	65.0	2
73.0	70.0	2
73.0	80.0	2
73.0	90.0	2
77.0	48.0	2
77.0	51.0	2
77.0	55.0	2
77.0	60.0	2
77.0 77.0	65.0	2
77.0 77.0	70.0	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
77.0	80.0 90.0	2
120.0	45.0	3
120.0	70.0	3
107.0	31.0	10
107.0	31.0	10

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